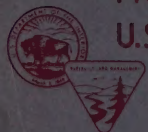




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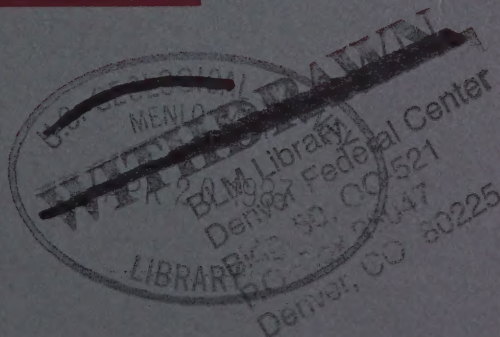


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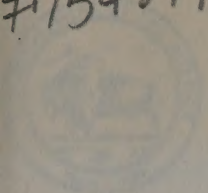
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Bureau of Land Management
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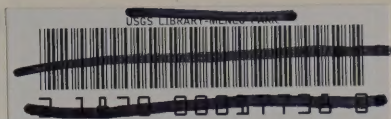
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Forest Service
Southwestern Region, R-3



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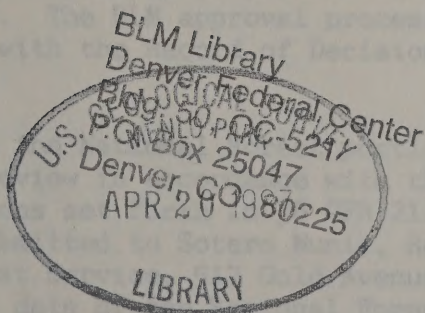
United States Department of the Interior



ARIZONA INTERCONNECTION PROJECT

ARIZONA INTERCONNECTION PROJECT

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NOTICE

This is the Arizona Interconnection Project Proposed Plan Amendment and Final Environmental Impact Statement (PA/EIS). The final document incorporates the draft by reference, and includes an updated summary from the draft, changes to the draft as a result of public review and comment, a record of public comment on the draft, responses to those comments, and the proposed plan. Copies of the draft are available from the BLM Las Cruces District Office, 1800 Marquess Street, Las Cruces, New Mexico 88005.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT LAS CRUCES DISTRICT OFFICE

1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Reader:

Enclosed for your information is the Proposed Plan Amendment/Final Environmental Impact Statement for the Arizona Interconnection Project. The document addresses El Paso Electric Company's proposed Right-of-Way application to construct a 345 kV transmission line from the Red Hill tie point 12 miles east of the Springerville generating station, to the Luna substation near Deming, New Mexico.

This final document contains the proposed plan. The proposed plan is Alternative D which crosses approximately 56.0 miles of National Forest lands and 79.0 miles of BLM lands. The decision to implement the selected alternative on National Forest lands will be made by the Regional Forester and on BLM lands by the State Director. This alternative was selected by the BLM and the Forest Service as a result of public comments and concerns on the draft document of November, 1986.

The BLM portion of the proposed plan may be protested. Protests must be postmarked no later than May 4, 1987. Protests must be sent in writing to:

BLM Director (760)
Room 909, Premier Building
18th and C streets NW
Washington, DC 20240

Protest must contain: (1) The name, mailing address, telephone number and interest of the person filing the protest; (2) A statement of the issue or issues being protested; (3) A statement of the part or parts of the plan being protested; (4) A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party, or an indication of the date the issue or issues were discussed for the record; and (5) A concise statement explaining why the proposed plan is believed to be wrong.

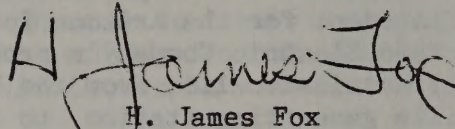
At the end of the protest period, May 4, 1987, the BLM portion of the proposed plan, excluding any portion under protest, shall become final. Approval shall be withheld on any portion of the plan under protest until final action has been completed on such protest. The BLM approval process and the final plan for the BLM will be published with the Record of Decision in late Spring or early Summer 1987.

The Forest Service decision on the National Forest portion of the proposed plan is subject to administrative review in accordance with the provisions of the Forest Service Appeal Regulations set forth in 36 CFR 211.18. Notice of appeal must be made in writing and submitted to Sotero Muniz, Regional Forester, Southwestern Region, USDA Forest Service, 517 Gold Avenue SW, Albuquerque, NM 87102, within 45 days from the date of the Regional Forester's decision. A statement of reasons to support the appeal and any request of oral presentation must be filed within the 45 day period for filing a notice of appeal.

A BLM protest and/or Forest Service appeal must be filed separately if reviewer wishes to direct concerns on lands administered by BLM or Forest Service. Those people not wishing to protest or appeal the proposed plan but wishing to

comment may send comments to Bureau of Land Management, Las Cruces District Office, 1800 Marquess Street, Las Cruces, NM 88005. Comments must be postmarked no later than May 4, 1987. All comments received will be considered in the preparation of the BLM Record of Decision.

Sincerely,


H. James Fox
District Manager

COVER SHEET
Arizona Interconnection Project
Plan Amendment/Environmental Impact Statement

() Draft
(X) Final

(X) Administrative
() Legislative

Lead Agency

U.S. Department of the Interior
Bureau of Land Management

Cooperating Agencies

U.S. Department of Agriculture
Forest Service

PA/EIS Contact

For further information contact Juan Padilla:

Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
(505) 525-8228

Counties Within Study Area

Luna, Hidalgo, Sierra, Socorro, Catron and Grant Counties, New Mexico; and Greenlee County, Arizona

Copies of the final have been sent to and comments requested from: See Chapter 3.

Date PA/EIS Filed With EPA and Available to the Public:

March 20, 1987

Date by Which Comments, BLM Protests or Forest Service Appeals Must Be Postmarked

May 4, 1987

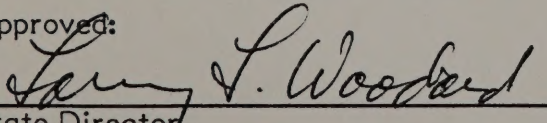
Abstract

El Paso Electric Company proposes to construct a 345kV transmission line from the vicinity of Red Hill, New Mexico to the vicinity of Deming, New Mexico. The facilities would reduce oil and gas dependence, provide access to the economy energy market, enhance system reliability and meet forecasted need for power by providing long-term firm transmission capacity. Alternatives considered are no action, energy conservation, alternative generating sources, alternative transmission systems, alternative transmission technologies, and the proposed action with its seven routing alternatives. Routing alternatives include:

- Route A - Mangas-North Continental Divide Alternative
- Route B - Mangas-South Continental Divide Alternative
- Route C - Tularosa-North Continental Divide Alternative
- Route D - Tularosa-South Continental Divide Alternative
- Route E - TEP Greenlee-Hidalgo-Luna Alternative
- Route F - TEP Glenwood-Black Mountain-Luna Alternative
- Route G - TEP Glenwood-Highway 180 Alternative

This Plan Amendment/Environmental Impact Statement (PA/EIS) assesses the environmental consequences of the federal approval for the project. Major impacts of the proposed action would be impacts of access roads, tower sites and staging areas on soils, springs, vegetation, wildlife and cultural resources, and the impacts of the transmission line itself on scenic resources and land uses, and for electromagnetic and health effects. A Proposed Plan is included in the final document. The Proposed Plan was developed following a 90-day review of the draft.

Approved:



State Director
Bureau of Land Management
New Mexico

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SUMMARY

INTRODUCTION

El Paso Electric Company (EPE) is proposing to construct approximately 210 miles of single-circuit 345 kilovolt (kV) transmission line between the existing Springerville Switchyard near Springerville, Arizona and the Luna Substation near Deming, New Mexico. The line, known as the Arizona Interconnection Project, would be constructed using wood pole frame structures approximately 70 feet in height. The project would also require equipment additions to the Luna Substation, jointly owned by EPE, Public Service Company of New Mexico (PSNM), and Texas-New Mexico Power (TNMP), and the Springerville Switchyard, owned and operated by Tucson Electric Power (TEP).

This project was previously analyzed as the Springerville to Deming 345kV Transmission Line Project. The Draft Environmental Impact Statement/Management Framework Plan Amendment (EIS/MFPA) was released in January 1993; the final in July 1993. Following public review of the draft and final environmental documents, it was determined by the Bureau of Land Management (BLM) that not all reasonable alternatives had been considered and that a new environmental process should begin.

PURPOSE AND NEED

Electric utilities have a responsibility to provide adequate supplies of reliable and economical electricity to all classes of customers. EPE's existing system strongly limits its ability to do so. The system is dependent on oil and natural gas for baseload generation; historically these fuels have been expensive and their availability unreliable. Limited transmission capacity in the present system further reduces reliability, and limits access to more economical generation sources outside the El Paso area.

The proposed addition of the Arizona Interconnection Project will allow EPE to provide economical energy to its customers, and will enhance the overall reliability of the interconnected electric system in the Texas, New Mexico and Arizona region. Specifically, the proposed project will (1) help reduce dependence on oil and natural gas for generating electricity consumed in the EPE service territory, (2) furnish access to the economy energy market, (3) enhance system reliability, and (4) help meet EPE's forecasted need to transport firm power by providing firm transmission capacity.

Reduce Dependence on Oil and Gas Consumption for Generating Electricity
The proposed project will provide access to baseload coal (and nuclear energy in the western states), and will therefore be a major step toward reducing the use of oil and gas for generation. Also, during periods of high demand, the proposed project will provide EPE access to lower cost, non-oil, or non-coal-fired power to displace high-cost generation currently used in the **SUMMARY** area.

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Furnish Access to the Economy Energy Market - The proposed project would provide EPE transmission capacity for obtaining lower-cost power from Arizona, New Mexico, Utah and Colorado. It would also benefit other utilities. At present, if the utilities serving southern New Mexico increase their imports of energy, imports to other areas of the state must be reduced due to transmission system constraints. With the addition of the proposed line, these other utilities will be able to better utilize their existing facilities to provide economic energy.

Enhance System Reliability - The addition of an independent transmission line from a strong external source will provide the increased reliability required in EPE's transmission system. Through the "power pooling" concepts being used by the Inland Power Pool and the New Mexico Power Pool, neighboring utilities will be able to rely on the proposed line during emergencies in their own transmission networks.

Meet Forecasted Need for Power Transport by Providing Long-Term Firm Transmission Capacity - The proposed project would provide EPE with increased transfer capabilities (an additional 250 megawatts (MW) to the existing 400 MW) from sources in Arizona and New Mexico. This will be important in helping EPE meet its forecasted need to transport firm power. Interruptible transmission capacity that may become available is expected to be substantially less than the amount of contracted and other potential firm power requirements.

SCOPING AND PROJECT-RELATED STUDIES

As required by the National Environmental Policy Act (NEPA) of 1969, the BLM and the United States Forest Service (USFS) completed numerous scoping activities. Scoping served to identify significant issues to be analyzed, determine the scope with which they were to be treated in the Plan Amendment/Environmental Impact Statement (PA/EIS), and eliminate issues and alternatives from detailed study, where appropriate. Scoping information provided the basis for identifying alternative routes, and developing the work plan for environmental baseline, impact assessment, and mitigation planning for the project.

Scoping activities included: (1) review of previous studies of transmission projects in the area; (2) completion of a regional siting study, including resource sensitivity analyses, agency contacts, and public scoping meetings; and (3) identification of alternative corridors.

Review of Previous Studies of Transmission Projects in the Area - Existing published and unpublished environmental data, reports and statements prepared for previous transmission line projects in the area were reviewed and evaluated to determine applicability and adequacy for use in the environmental studies. The most relevant information was included in four major reports:

- Springerville to Deming Transmission Project MFPA/EIS
- Dona Ana County, New Mexico to Greenlee County, Arizona EIS
- Greenlee County, Arizona to El Paso, Texas 345kV Transmission Line EIS
- Tucson, Arizona to San Juan Power Plant, New Mexico Environmental Analysis

Completion of a Regional Siting Study - Prior to the preparation of the PA/EIS, a regional siting study was conducted and consisted of a regional environmental study and sensitivity analysis to identify alternative transmission line corridors, agency contacts for purposes of data gathering and project information dissemination, and public scoping meetings throughout the study region. The study area contained approximately 30,000 square miles and was defined on the north by several Wilderness Study Areas (WSAs) and various Indian reservations, on the east by the White Sands Missile Range, on the south by a line south of existing east/west utility corridors and north of the Mexican border, and on the west by the Apache Indian Reservation in Arizona. The study area was designed to include all reasonable and potentially feasible alternative transmission line corridors between the Springerville/Red Hill area and Luna Substation near Deming, New Mexico.

The public participation program during the regional study focused on distributing information on the study process and the subsequent corridor studies and PA/EIS, establishing key agency and public contacts, and initiating and facilitating the scoping process. Newsletters and fact sheets were distributed periodically throughout the study process and public comments were solicited. Some of the more frequently voiced concerns include: routing preferred on public lands instead of private lands; use of existing transmission line corridors; and minimizing impacts on sensitive visual resources, existing or planned land uses such as ranch headquarters, the Very Large Array (VLA), cultural and biological resources. Questions were raised about the viability of considering alternative transmission line corridors through National Forest land. Agencies and organizations having jurisdiction and/or specific project interest within the study area were contacted to inform them of the project, to verify the status and availability of existing environmental data, and to solicit their input into the study process. A Steering Committee was established at the outset of the project studies to guide WIRTH through the EIS preparation and to review data and decision criteria. The Steering Committee was comprised of representatives of the Las Cruces District and New Mexico State Offices of the BLM, BLM resource area offices within the district, representatives of the Gila and Cibola National Forest, a staff member from the State of New Mexico Environmental Improvements Division representing state agencies and the Governor's office, member of or representatives from the various County Commissions, WIRTH and EPE.

Regional studies were conducted for four major resource areas including land use, visual resources, biological resources and cultural resources. These

environmental studies provided the major data in determining constraints and/or opportunities to selection of alternative transmission line corridors. Typical land uses inventoried were existing and future land use types; park, preservation and recreation areas; existing linear utilities and corridors; and land jurisdiction. Visual resources found in the study area and mapped included scenic areas, and visible areas from visually sensitive residential areas, highways, or park and recreation areas. Unusual, sensitive or rare plant and animal sites or habitats were the main biological issue for the transmission line siting study. Cultural resources included inventories of all national or state register sites, or otherwise sensitive archaeological, historic or Native American sites. The findings of the resource evaluation and the analysis to determine sensitivity to transmission line siting are presented in the Arizona Interconnection Transmission Line Regional Environmental Study (WIRTH Environmental Services, July 1986).

The individual resources were assigned sensitivity to the routing of a transmission line. Sensitivity is that measure of the probable adverse response of each resource to direct and indirect impacts associated with the construction, operation, maintenance and abandonment of the proposed transmission line. Criteria used in this determination included considerations of resource value, protective status, present or future uses, and hazards. These resources were then mapped according to their respective sensitivity level including exclusion area, avoidance area, and low to moderate sensitivity.

Identification of Alternative Corridors - After completion of the sensitivity analysis for each resource, a composite sensitivity map was prepared and used to identify constraints and locational opportunities. Alternative corridor locations were then plotted taking into account the composite sensitivity, the locations of existing transportation and utility corridors, topographic constraints and utilization of public lands. Chosen corridors are linear paths in which features or areas of exclusion and avoidance are avoided or minimized, locations through rough topography are minimized, proximity to suitable existing roads and locations parallel to existing transmission or utility corridors are maximized, and routing on private lands is minimized in favor of public lands.

A Notice of Intent to prepare a PA/EIS was published in the Federal Register on April 16, 1986. Public scoping meetings were held in six communities between May 6 and May 15, 1986.

Alternative transmission line routes were identified based on previous studies, the regional siting study, and public and agency input. Subsequently the environment was inventoried for 10 resource categories along all final alternative routes. This baseline was then used in assessing project-related impacts.

Four public workshops were held in September 1986 to report results of environmental studies, present preliminary alternatives, and gain public input regarding the acceptability of those alternatives. In January and February 1987, public hearings were held to solicit public comments.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

Six general alternatives were evaluated by EPE to meet its system needs: (1) energy conservation, (2) alternative generation sources, (3) alternative transmission systems, (4) alternative transmission technologies, (5) the proposed action, and (6) no action. The first four of these alternatives were eliminated after consideration, because they did not meet the system needs.

EPE has developed and implemented numerous energy conservation and load management programs. Conservation, however, only affects energy use, and therefore cannot be considered an alternative action that would meet the stated need for the project. The proposed action could be considered an oil and gas conservation effort. Firm power from Springerville Generating Station would be distributed by the transmission line capacity provided by the project, thereby displacing oil and gas or other types of nonrenewable power generation in EPE's service territory.

Establishing a local coal-fired generating plant would diversify EPE's fuel mix, reduce its dependence on non-renewable petroleum fuels, and reduce requirements for transmission facilities to import remotely generated power. However, construction of a new power plant would cause a significant financial impact. Such costs are not justifiable at present, since existing and planned generating capacity appears adequate for the near future. A new plant would not be required until at least the late 1990s; therefore, this action was eliminated as an alternative. As existing generating plants are retired and system changes occur, a new coal plant could be a consideration for replacing firm generating capacity, which is not required at the present time.

EPE has investigated and participated in the experimental development of numerous alternative generation sources including cogeneration, pumped hydroelectric, biomass, and solar. Because of the high cost of these technologies or their unavailability for commercial use, these alternatives are not considered viable.

EPE evaluated the feasibility of increasing power purchases from other utilities and wheeling the power over existing transmission lines. This alternative was not considered viable, because the present system is operated at capacity whenever possible. Any increase in power brought into the system over existing facilities would greatly reduce the reliability of the entire system. Transporting additional power over existing lines would decrease the system's stability and make outages more frequent and severe.

Alternative transmission technologies (such as voltages other than the proposed 345kV, direct current (dc) instead of alternating current (ac), or underground construction) were evaluated. However, these technologies were not considered to be viable alternatives, due to their substantially higher economic costs and/or increased environmental impacts.

Advantages of the no-action alternative would include (1) preclusion of environmental impacts within the project study area, and (2) elimination of

financial costs associated with construction and operation of a 345kV line. The disadvantages would include environmental, socioeconomic and electric service impacts that would result due to other mitigating actions taken to ensure adequate and affordable energy supplies to EPE.

PROPOSED ACTION

EPE proposes to construct, operate and maintain a single-circuit, overhead 345kV transmission line of approximately 210 miles between the Springerville Switchyard in Arizona and the Luna Substation in New Mexico. The line would be supported by wood H-frame structures placed an average of 800 feet apart. Existing access roads and cross-country travel along the right-of-way will be used where feasible.

The transmission line will be three-phase and use a two-conductor bundle per phase. The wood poles will be treated Douglas fir, and there will be an average 51- to 55-foot conductor height at the structures. In certain locations, where engineering or environmental constraints dictate, metal structures may be used. After completion of construction, the access roads will be used only for routine line patrols with four-wheel drive vehicles and any required maintenance.

The proposed action also includes installing additional equipment in the Luna Substation. These additions, to be completed by EPE, would not require any additional land. TEP would add equipment to the Springerville Switchyard as part of a planned expansion of that facility.

The project is scheduled to begin commercial operation by June 1989. Construction would begin in early 1988. Completion of all phases of construction will require a total work force of 65 to 120 people, of which about 50 percent would be hired locally.

ROUTING ALTERNATIVES

Initial routing alternatives were identified through the regional environmental study. Data from this study were used to determine the relative environmental compatibility of alternative corridors. The project Steering Committee recommended the elimination of alternatives with unacceptable environmental consequences, and these recommendations were reviewed by the public and agencies.

Final routing alternatives for the proposed line were determined through a process of documentation and elimination of alternatives with serious constraints. Determination was based on either environmental or engineering considerations, or an obvious environmentally preferred routing alternative (similar origin, destination and routing). Alternative corridors were eliminated for a number of reasons, including environmental conflicts, public and agency opposition, and system planning/performance criteria.

For routing options remaining, detailed environmental studies were conducted to form the basis for comparing those alternatives. Approximately 900 miles of alternative corridors were studied in detail. To select environmental preferences, the environmental consequences of each alternative were summarized based on impact assessment results, environmental resource preferences, and agency and public comments. A network of routes was organized into two major routing alternatives: the eastern routing alternatives, and the western routing alternatives. Each of these contained several routing options. The final alternatives are as follows:

Eastern Routes:

- Route A: Mangas-North Continental Divide Alternative
- Route B: Mangas-South Continental Divide Alternative
- Route C: Tularosa-North Continental Divide Alternative
- Route D: Tularosa-South Continental Divide Alternative

Western Routes:

- Route E: TEP-Greenlee-Hidalgo-Luna Alternative
- Route F: TEP-Glenwood-Black Mountain-Luna Alternative
- Route G: TEP-Glenwood-Highway 180 Alternative

No-Action

AFFECTED ENVIRONMENT

Three primary environmental systems were examined: the natural environment including air, earth, and biological resources; the human environment including land use, visual resources, and socioeconomics; and the cultural environment including archaeological, historic, and Native American resources. Inventory results established the baseline for the no-action alternative. Following identification of preliminary corridor locations, a study area (corridor) was then defined for the various resource investigations.

The project study area in Arizona and New Mexico is characterized by a warm and arid climate, though large variations in precipitation, temperature and winds occur due to local topographical effects. Average annual precipitation ranges from 8 to 13 inches, most of which occurs in July and August from thunderstorms. Air quality in the area is excellent because of sparse population and limited development.

The study area encompasses portions of three physiographic divisions: Basin and Range province, Mogollon-Datil subprovince, and Colorado Plateau province. Elevation ranges from about 4,000 feet in the basins to over 10,000 feet in mountainous areas. Drainage is either confined to closed basins, or flows to the Rio Grande (east of the Continental Divide) or the Gila River (west of the Continental Divide). The area is in a region of relatively low seismicity. Throughout the study area, most of the soils are highly erosive, and vegetation is usually sparse. The potential for occurrence of vertebrate

fossils in adequate exposures is generally considered moderate throughout the alternative corridors.

Biological resources potentially affected by the proposed project consist of nine major vegetation types and two important ecotones between types. The major vegetation types occurring within the alternative corridors are Chihuahuan desertscrub, desert and plains grasslands, pinyon-juniper and oak woodlands, ponderosa pine forest, mixed coniferous forest, and riparian woodlands. These vegetation types support a large variety of mammals, birds, amphibians and reptiles.

Five species of legally protected fish potentially occur in the vicinity of the alternative routes, all of which are known from the Gila, San Francisco and Blue rivers of New Mexico and Arizona. There are no known localities of legally protected amphibians within the corridors. Five protected species of reptiles potentially occur in the corridors. Eleven species of protected birds are known to occur within habitat types traversed by the corridors, but only Swainson's hawk is confirmed as occurring within any corridor (Route D). No protected mammalian species are known to occur along the routes, but a pronghorn special use area occurs in Route C. A pronghorn special use area is an area containing a forbe(s) conducive to the pronghorn antelope's diet.

Fourteen plant species of state and/or federal concern are likely to occur within the alternative corridors. Riparian crossings occur on all alternative routes. Floodplains and wetlands within the various alternative routes include desert wash habitats and riparian woodlands.

Approximately 30 percent of the land within the study corridors is BLM public land, 25 percent is National Forest System lands, 20 percent is Arizona and New Mexico State Trust lands, and 25 percent is privately owned. The majority of lands are used for cattle grazing. Other major uses include timber production, agriculture, mining, airports/airstrips, scientific research facilities, utilities, residential, commercial, governmental and other industrial facilities. Portions of two National Forest Wilderness Areas and seven WSAs are located within study corridors.

All of the final alternative routes contain areas of Class A, B or C scenic quality (BLM) and variety class (USFS). High sensitivity viewpoints in all corridors include major travel routes and residences.

Approximately 9,000 archaeological and historical sites have been recorded within the study area, five of which are national or state landmarks or monuments, and 228 of which are listed on national or state registers of historic places. The final alternative corridors avoid all of these 233 sites. Predictive cultural resource sensitivity assessments categorized the area within each corridor as having high, moderate or low sensitivity.

ENVIRONMENTAL CONSEQUENCES

Environmental consequences from the proposed project are the residual impacts remaining after mitigating measures have been applied to initial (unmitigated) impacts. The process involved assessing impacts based on a comparison of the proposed project with the pre-project environment, determining mitigation that would reduce or eliminate impacts, and identifying residual impacts.

Impacts to air resources will be short-term, resulting from transmission line construction activities. The principal type of environmental impacts associated with earth resources is the potential for increased erosion hazards.

Typical impacts to biological resources include effects on threatened, endangered or protected species, rare or unique vegetation types, migration corridors for wildlife, areas of low revegetation potential, or highly productive wildlife habitat.

To reduce impacts to soils and biological resources, mitigation measures have been recommended and include no new access in designated areas, no widening or upgrading of existing access roads, permanently close access roads, new access to follow landform contours, utilize special tower design, and avoid sensitive features.

Land use impacts considered include those that would displace, alter or otherwise physically affect any existing or planned residential, commercial, or industrial use or activity, any agricultural use, any area designated as suitable for timber production, or any recreational, preservation, educational or scientific facility or use.

Potential socioeconomic effects could include construction-period impacts to area communities, social and economic impacts along the selected route, and fiscal impacts within local jurisdictions. These effects can be adverse or beneficial.

Visual impacts are considered adverse, direct, and long term. They may include effects to the quality of any scenic resource, the view from any residential or other sensitive land use or travel route, or the view from any recreation, preservation, education or scientific facility.

Direct, adverse physical impacts can occur to cultural resources during construction, while indirect impacts can result after construction due to increased erosion or increased access to sites. Adverse visual effects may occur to sites with high aesthetic or interpretive values.

Potential electrical, biological, health and safety effects from the proposed action were assessed. These include corona effects, electric and magnetic field effects, and effects on cardiac pacemakers, agriculture, and public safety.

PUBLIC ISSUES AND MANAGEMENT CONCERNS

Public issues and management concerns were identified in the public meetings, workshops and during the project scoping process. The issues and concerns and a comparison of each by alternative is summarized.

Visual Impacts - Mountainous terrain to rolling and flat deserts, grassland and hills characterize the New Mexico landscape. The landscape is largely undeveloped. Land ownership is divided primarily between State of New Mexico, private, and federal lands administered by the USFS and BLM. Of primary importance to the landowners and managers is the preservation of scenic and undisturbed lands and the views from sensitive viewpoints.

The ranking of alternatives is relative. All alternatives will have some adverse effect on the scenic quality. Alternatives when ranked from the least miles of high impact to the most miles of high impact are as follows: no-action, E, F, C, D, A, B and G.

Maximize Use of Public Lands (Federal and State) - One of the major public comments was the utilization of public lands for routing the transmission line since the line would have no benefit to private landowners. In response to this issue the route selection process attempted to locate the line on public lands to the maximum degree possible within environmental and engineering constraints.

Alternatives when ranked from the least miles of private land to the most miles of private land are as follows: no-action, E, F, D, B, C, A and G.

Use Existing Transmission Line Corridors - Both the public and agencies expressed a desire to locate the transmission line along existing transmission corridors, wherever possible, to minimize environmental impacts. All alternatives were sited to parallel existing transmission lines wherever possible.

Alternatives when ranked from the most miles parallel to least miles parallel are as follows: no-action, E, F, G, C and D tied, and A and B tied.

Minimize Land Use Impacts - A transmission line which directly impedes a facility or area's current or planned use constitutes a land use impact. Land uses found throughout the study area include ranch headquarters, roads, industrial uses, agricultural operations, urban areas, and recreational facilities. The route selection process attempted to minimize land use impacts wherever possible.

Alternatives when ranked from the least miles crossed or paralleled to most miles crossed or paralleled of land uses consisting of suitable timber, prime agriculture, semi-primitive area, proposed VLBA (radio telescope) interference zone and proposed development are as follows: no-action, D, C, E, F, G, (E, F and G tied), B and A. Alternatives when ranked from the least crossed to the most crossed of land uses consisting of proposed scenic road, gravel pit,

Continental Divide Trail, Continental Divide Trail - alternative, and stock tank/corral are as follows: no-action, E, G, F, A, B (A and B tied), D and C.

Minimize Impacts to Cultural Resources - Based on archaeological evidence, the project area has been occupied since about 10,000 BC. Only relatively small portions of the area have been inventoried using modern standards of cultural resource survey though thousands of sites have been previously recorded in the area. The project area remains largely rural.

Alternatives when ranked from the least miles of high and moderate impacts to the most miles of high and moderate impacts are as follows: no-action, E, G, F, D, C, A and B.

Minimize Impacts to Biological Resources - Vegetation and wildlife species within the project area are diverse. The project area contains 11 vegetation communities and nearly 200 species of state or federally listed sensitive plants. Also within the project area is excellent habitat for big game, sensitive raptors and other state and federally listed invertebrate and vertebrate sensitive species. Riparian, wetland and aquatic habitats occur within the project region. Each are significant because they provide habitat to rare plant and wildlife species. In addition, they are limited in their occurrence and are unique in this arid portion of the country. Wherever possible, the most sensitive biological resource areas were avoided in response to public and agency concerns.

Alternatives when ranked from least miles of moderate impact to the most miles of moderate impact are as follows: no-action, A, B, C and D (tied); E; F and G (tied). None of the alternatives result in high impacts to sensitive biological species.

Property Values and Compensation - Private property landowners expressed a concern for a decrease in the monetary value of their property as a result of the proposed transmission line and whether or not they would receive adequate compensation for property loss. Transmission lines could potentially affect existing or future property values, though there is no conclusive evidence to suggest this. Landowners are compensated, based on fair market value of the land, for an easement or purchase of their land. There is no substantial difference in the effects to private property owners between alternative routes.

EPE Need for Project - Public concern included the need for the project, which is to supply transmission capacity for transporting baseload and economy energy to EPE's Texas and New Mexico customers. In addition, the 345kV transmission facility will meet transmission system reliability criteria for single line outage and voltage drop. The new line will help reduce dependence on other energy sources, such as oil and gas, and will allow additional savings for EPE's customers by purchasing economy energy over the interconnected transmission grid. EPE would also gain firm transmission capacity with new transfer capabilities of up to 250 MW from Arizona and

New Mexico. With the exception of the no-action alternative, all routing alternatives would serve the project's purpose and need.

Effects of Alternatives on Agency Land Management Plans - The USFS expressed a desire to minimize changes to the goals and objectives of the Gila National Forest Land and Resource Management Plan. The Plan recognized the existence of only one major high voltage utility corridor and the potential need for additional corridors. Resulting impacts and the potential need to amend the Forest Plan would be evaluated in conjunction with the evaluation of a line through the Forest as stated in the EIS. Both the BLM and USFS' concerns are inherent in their stated mission to protect the quality of their land resources, while balancing the need for development when a need is shown.

The impact to Forest Plan goals and objectives, for all alternatives, in the following areas are not considered to be significant: range, recreation, timber, wildlife, riparian and cultural resources.

ROUTE COMPARISONS

The comparative environmental consequences are summarized below for each of the seven final alternative routes.

Route A:

- Crosses most miles of Class A Scenic Quality landscapes of all routes (tied with Route B); crosses Plains of San Agustin; better than Routes C and D for impacts to residences.
- Crosses near more springs than other eastern route (tied with Route B); nearly equal to other routes for erosion hazard.
- Crosses near high density raptor nesting area and wintering area for bald eagles; tied with Route C for rare plant species habitat crossed.
- Least miles of paralleling existing transmission lines (tied with Route B).
- Most crossings of suitable timber and prime agricultural lands of all routes; best of eastern routes for crossings of proposed scenic roads and the proposed Continental Divide National Scenic Trail; crosses semi-private area.
- Similar to Route B for potential cultural resource impacts; worst routes overall.

Route B:

- Crosses most miles of Class A Scenic Quality landscapes of all routes; best of eastern routes for impacts to residences; most miles of high and moderate visual impacts of eastern routes.
- Crosses near more springs than other eastern route (tied with Route A); near equal to other routes for erosion hazard.
- Crosses more miles of sensitive wildlife species habitat of all routes; crosses most miles of riparian habitat of eastern routes.
- Least miles of paralleling existing transmission lines (tied with Route A).

- Most crossings (second to Route A) of suitable timber and prime agricultural lands for all routes; best of eastern routes (tied with Route A) for crossings of proposed scenic roads and the proposed Continental Divide National Scenic Trail; crosses semi-private area.
- Similar to Route A in potential cultural resource impacts; worst routes overall.

- Route C:
- Does not cross any Class A Scenic Quality landscapes; fewest miles of high and moderate visual impacts of eastern routes; most residences within one mile of all eastern routes; crosses Plains of San Agustin.
 - Crosses near least number of springs than any route; nearly equal to all eastern routes for erosion hazard.
 - Second best of eastern routes for minimizing crossing of sensitive wildlife habitat; best eastern route for crossing riparian habitat.
 - Parallels most miles of existing transmission line (tied with Route D) of eastern routes.
 - Least crossings (second to Route D) of suitable timber and prime agricultural lands of all routes; most crossings of proposed scenic roads and the Continental Divide National Scenic Trail of all routes.
 - Best of eastern routes (tied with Route D) for potential impacts to cultural resources.

- Route D:
- Least miles (second best of eastern routes) of crossing Class A Scenic Quality landscapes; second fewest miles of high and moderate visual impacts of eastern routes.
 - Second best of eastern routes for crossing near springs; nearly equal to all eastern routes for erosion hazard.
 - Best of all routes for least crossing the habitats of sensitive wildlife species; worst route for miles of crossing riparian habitat; potential increased access into ferruginous hawk nesting area.
 - Most miles of paralleling existing transmission lines of all eastern routes (tied with Route C).
 - Least crossing of suitable timber and agricultural lands of all routes; second to Route C in most crossings of proposed scenic roads and the Continental Divide National Scenic Trail; fewest miles of private land of eastern routes.
 - Least miles of potential impacts to cultural resources of eastern routes (tied with Route C).

- Route E:
- Second best western route for least crossing of Class A Scenic Quality landscapes; lowest visual impacts of all routes.
 - Western routes tied for most number of crossings of all routes near springs; worst of western routes for potential soil erosion hazards.

- Best of western routes for crossings of sensitive wildlife habitats; best route overall for number of crossings of riparian habitats.
- Parallels existing transmission lines for nearly its entire distance.
- Better than all eastern routes for number of crossings of suitable timber and prime agricultural lands (tied with other western routes); least crossings of the Continental Divide National Scenic Trail and proposed scenic roads; crosses through Saliz Pass paralleling Scenic Route 180; parallels boundary of Wilderness Area.
- Best route overall for least miles of potential impacts to cultural resources.

- Route F:
- Worst of western routes for miles of crossing Class A Scenic Quality landscapes; crosses San Francisco River near recreation site; second best western route for overall visual impacts.
 - Western routes tied for most number of crossings of all routes near springs; second best of western routes for soil erosion hazard; better than all eastern routes.
 - Crosses through significant nesting habitat for peregrine falcon and bald eagle; crosses through area of dense populations of rare plants and animals; worst of western routes for miles of riparian habitat crossed.
 - Second best of western routes for miles of paralleling existing transmission lines.
 - Better than all eastern routes for crossing of suitable timber and prime agricultural lands (tied with other western routes); better than all eastern routes for crossings of Continental Divide National Scenic Trail and proposed scenic roads; worst of western routes.
 - Second best route overall for least miles of potential impacts to cultural resources.

- Route G:
- Best western route for least crossing of Class A Scenic Quality landscapes; highest miles of overall high and moderate visual impacts of all routes; substantial portion parallels Highway 180.
 - Western routes tied for most number of crossings of all routes near springs; best of western routes for soil erosion hazard; better than all eastern routes.
 - Crosses through significant nesting habitat for peregrine falcon and bald eagle; crosses through area of dense populations of rare plants and animals.
 - Worst of western routes for miles of paralleling existing transmission lines.
 - Better than all eastern routes for crossing of suitable timber and prime agricultural lands (tied with other western routes); better than all eastern routes for crossings of Continental Divide National Scenic Trail and proposed scenic roads; highest percentage of private land of all routes.

- Worst of western routes for potential impacts to cultural resources; better than all of eastern routes.

No-Action: • Basis for comparison of routing alternatives - no adverse environmental impacts identified in the study area.

AGENCY PROPOSED ALTERNATIVE

The agency proposed alternative was identified based upon review of significant, unavoidable adverse effects, public comments, and agency criteria.

Because the no-action alternative does not serve the objectives of this project, it has been eliminated from consideration as the agency proposed alternative. The BLM/USFS combined agency proposed alternative is Route D.

Public comment showed a strong preference for maximizing the use of federally administered public lands and for avoiding the Plains of San Agustin. Based on public input and the additional criteria listed below, it was appropriate to select Route D as it is responsive to the above-mentioned concerns.

In addition to the public's concerns, the following four criteria were also used to assist the agencies in arriving at a proposed alternative:

- Rehabilitation - The ability to respond to surface disturbance with a high potential for success in achieving revegetation and stabilization.
- Expansion - The capability for adding transmission or other linear utility lines within an existing or potential corridor.
- System Reliability - Risk or system failure due to natural and/or man-caused occurrences.
- Cost - The estimated construction cost as submitted by EPE (does not include right-of-way acquisition costs).

The significant, unavoidable adverse effects of Route D involve biological, visual and cultural resources, as summarized below:

<u>Resource Category</u>	<u>Significant Unavoidable Adverse Impacts</u>
Biological Resources	The route would highly stress or potentially disturb 3.1 miles of special-status riparian habitat. Although this would be a moderate impact, it is considered significant due to the sensitivity of the resource.

Resource Category	Significant Unavoidable Adverse Impacts
Visual Resources	The route would result in 24.0 miles of potential high impacts to the area's visual resources. Significant impacts to 32 residences within 1 mile of the route could be predicted, and to three proposed scenic highways crossed. The route would cross 12.6 miles of VRM Class II lands, 73.3 miles of VRM Class III lands, 3.0 miles classified as Retention, and 24.2 miles of Partial Retention VQO.
Cultural Resources	The route would result in 7 miles of predicted high impact to cultural resources along Route D. Among the 52 cultural sites identified 2 were historic, 1 was Native American, and 49 were prehistoric.

CHAPTER I - PROPOSED PLAN

DESCRIPTION

The Proposed Plan is to approve Alternative Route D as a utility corridor, and grant EPE a right-of-way across approximately 115 miles of public land administered by USFS and BLM for construction of its proposed 345kV Arizona Interconnection Project. This right-of-way would be along sections of the route described as Alternative D and analyzed in the Draft and Final PA/EIS.

SELECTION OF THE PROPOSED PLAN

The Proposed Plan was selected by the BLM as the lead agency with the USFS as the cooperating agency. After reviewing the District Manager's recommendation, the New Mexico State Director approved the Proposed Plan. Selection of the Proposed Plan was based on the following considerations:

- The issues and concerns identified during the planning process.
- Public hearings and comments received during the public review of the Draft PA/EIS.
- Formal consultation and coordination with other agencies.
- Decision criteria developed and considered by management.
- Impact analysis of the proposed action and alternatives.

CONSISTENCY WITH OTHER PLANS

There are no known inconsistencies or conflicts between the Proposed Plan and officially approved and adopted resource-related policies and programs of BLM, USFS, other federal agencies, state and local governments, or Indian tribes.

COMPARATIVE ANALYSIS

Approximately 900 miles of alternative corridors were studied in detail. To select environmental preferences, the environmental consequences of each alternative were summarized based on impact assessment results, environmental resource preferences, and agency and public comments. A network of routes were organized into two major routing alternatives: the eastern routing alternatives, and the western routing alternatives (see Figure I-1). Each of these contained several routing options. The final alternatives are as follows:

CHAPTER I PROPOSED PLAN

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The Proposed Plan is to approve Alternative Route D as a utility corridor, and grant EPE a right-of-way across approximately 135 miles of public land administered by USFS and BLM for construction of its proposed 345kV Arizona Interconnection Project. This right-of-way would be along sections of the route described as Alternative D and analyzed in the Draft and Final PA/EIS.

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The Proposed Plan was selected by the BLM as the lead agency with the USFS as the cooperating agency. After reviewing the District Manager's recommendation, the New Mexico State Director approved the Proposed Plan. Selection of the Proposed Plan was based on the following considerations:

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Eastern Routes:

- Route A: Mangas-North Continental Divide Alternative
- Route B: Mangas-South Continental Divide Alternative
- Route C: Tularosa-North Continental Divide Alternative
- Route D: Tularosa-South Continental Divide Alternative

Western Routes:

- Route E: TEP-Greenlee-Hidalgo-Luna Alternative
- Route F: TEP-Glenwood-Black Mountain-Luna Alternative
- Route G: TEP-Glenwood-Highway 180 Alternative

No-Action

Affected Environment

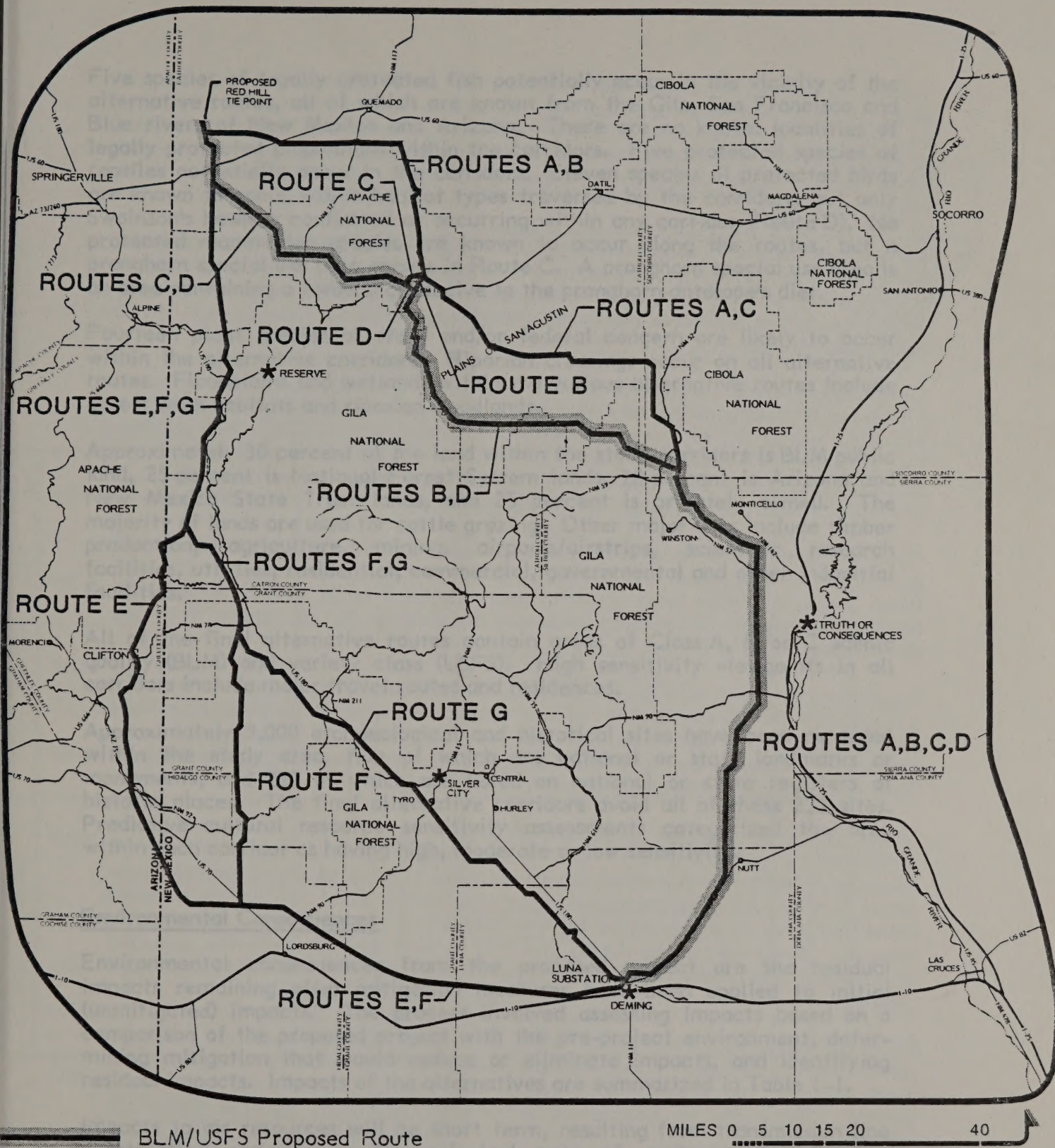
Three primary environmental systems were examined: the natural environment including air, earth, and biological resources; the human environment including land use, visual resources, and socioeconomics; and the cultural environment including archaeological, historic, and Native American resources. Inventory results established the baseline for the no-action alternative. Following identification of preliminary corridor locations, a study area (corridor) was then defined for the various resource investigations.

The project study area in Arizona and New Mexico is characterized by a warm and arid climate, though large variations in precipitation, temperature and winds occur due to local topographical effects. Average annual precipitation ranges from 8 to 13 inches, most of which occurs in July and August from thunderstorms. Air quality in the area is excellent because of sparse population and limited development.

The study area encompasses portions of three physiographic divisions: Basin and Range province, Mogollon-Datil subprovince, and Colorado Plateau province. Elevation ranges from about 4,000 feet in the basins to over 10,000 feet in mountainous areas. Drainage is either confined to closed basins, or flows to the Rio Grande (east of the Continental Divide) or the Gila River (west of the Continental Divide). The area is in a region of relatively low seismicity. Throughout the study area, most of the soils are highly erosive, and vegetation is usually sparse. The potential for occurrence of vertebrate fossils in adequate exposures is generally considered moderate throughout the alternative corridors.

Biological resources potentially affected by the proposed project consist of nine major vegetation types and two important ecotones between types. The major vegetation types occurring within the alternative corridors are Chihuahuan desertscrub, desert and plains grasslands, pinyon-juniper and oak woodlands, ponderosa pine forest, mixed coniferous forest, and riparian woodlands. These vegetation types support a large variety of mammals, birds, amphibians and reptiles.

FINAL ALTERNATIVE ROUTES



BLM/USFS Proposed Route

Alternative Routes

* Public Hearing Locations

MILES 0 5 10 15 20 40

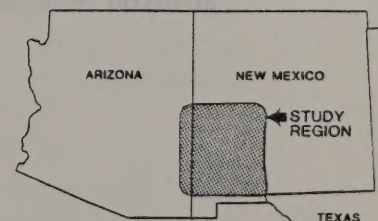


FIGURE 1-1

Five species of legally protected fish potentially occur in the vicinity of the alternative routes, all of which are known from the Gila, San Francisco and Blue rivers of New Mexico and Arizona. There are no known localities of legally protected amphibians within the corridors. Five protected species of reptiles potentially occur in the corridors. Eleven species of protected birds are known to occur within habitat types traversed by the corridors, but only Swainson's hawk is confirmed as occurring within any corridor (Route D). No protected mammalian species are known to occur along the routes, but a pronghorn special use area occurs in Route C. A pronghorn special use area is an area containing a forb(s) conducive to the pronghorn antelope's diet.

Fourteen plant species of state and/or federal concern are likely to occur within the alternative corridors. Riparian crossings occur on all alternative routes. Floodplains and wetlands within the various alternative routes include desert wash habitats and riparian woodlands.

Approximately 30 percent of the land within the study corridors is BLM public land, 25 percent is National Forest System lands, 20 percent is Arizona and New Mexico State Trust lands, and 25 percent is privately owned. The majority of lands are used for cattle grazing. Other major uses include timber production, agriculture, mining, airports/airstrips, scientific research facilities, utilities, residential, commercial, governmental and other industrial facilities.

All of the final alternative routes contain areas of Class A, B or C scenic quality (BLM) and variety class (USFS). High sensitivity viewpoints in all corridors include major travel routes and residences.

Approximately 9,000 archaeological and historical sites have been recorded within the study area, five of which are national or state landmarks or monuments, and 228 of which are listed on national or state registers of historic places. The final alternative corridors avoid all of these 233 sites. Predictive cultural resource sensitivity assessments categorized the area within each corridor as having high, moderate or low sensitivity.

Environmental Consequences

Environmental consequences from the proposed project are the residual impacts remaining after mitigating measures have been applied to initial (unmitigated) impacts. The process involved assessing impacts based on a comparison of the proposed project with the pre-project environment, determining mitigation that would reduce or eliminate impacts, and identifying residual impacts. Impacts of the alternatives are summarized in Table 1-1.

Impacts to air resources will be short term, resulting from transmission line construction activities. The principal type of environmental impacts associated with earth resources is the potential for increased erosion hazards in most areas with steep slopes or rugged terrain.

Typical impacts to biological resources include effects on threatened, endangered or protected species, rare or unique vegetation types, migration corridors for wildlife, areas of low revegetation potential, or highly productive wildlife habitat. Some long-term residual collision hazard for bald eagles and other raptors would result from construction near wintering areas or from migratory patterns.

To reduce impacts to soils and biological resources, mitigation measures have been recommended and include no new access in designated areas, no widening or upgrading of existing access roads, permanently close access roads, new access to follow landform contours, utilize special tower design, and avoid sensitive features.

Land use impacts considered include those that would displace, alter or otherwise physically affect any existing or planned residential, commercial, or industrial use or activity, any agricultural use, any area designated as suitable for timber production, or any recreational, preservation, educational or scientific facility or use. All land use effects identified can be mitigated to a low-impact level with appropriate mitigation; e.g., routing around land uses.

Potential socioeconomic effects could include construction-period impacts to area communities, social and economic impacts along the selected route, and fiscal impacts within local jurisdictions. These effects can be adverse or beneficial. Impacts to grazing lands are comparable for all alternatives and are considered insignificant.

Visual impacts are considered adverse, direct, and long term. They may include effects to the quality of any scenic resource, the view from any residential or other sensitive land use or travel route, or the view from any recreation, preservation, education or scientific facility. All routing alternatives would result in adverse residual visual impacts.

Direct, adverse physical impacts can occur to cultural resources during construction, while indirect impacts can result after construction due to increased erosion or increased access to sites. Adverse visual effects may occur to sites with high aesthetic or interpretive values. Mitigation to avoid identified sites is expected to be very effective in reducing or eliminating impacts. Sites identified during the 100 percent survey along the selected alternative that cannot be avoided will be mitigated by excavation and recovery.

Potential electrical, biological, health and safety effects from the proposed action were assessed. These include corona effects, electric and magnetic field effects, and effects on cardiac pacemakers, agriculture, and public safety. There are no conclusive long-term significant adverse electrical effects.

One of the major public comments was the utilization of public lands for routing the transmission line since the line would have no benefit to private landowners. In response to this issue the route selection process attempted to

ROUTE INVENTORY AND ASSESSMENT SUMMARY

				CONSTRUCTION		NATURAL ENVIRONMENT				HUMAN ENVIRONMENT										CULTURAL ENVI- RONMENT	SUMMARY OF CUMULATIVE ENVIRONMENTAL CONSEQUENCES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
				ACCESS****		WILDLIFE	VEGETATION	EARTH		LAND USE / VISUAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		TOTAL LENGTH (1)	CONSTRUCT SPUR ROADS (1)	NEW ACCESS IN FLAT TERRAIN (1)	NEW ACCESS IN ROLLING TERRAIN (1)	NEW ACCESS IN RUGGED TERRAIN (1)	HELICOPTER CONSTRUCTION *** (1)	PEREGRINE FALCON (1)	FERRUGINOUS HAWK (1)	BALD EAGLE (1)	SENSITIVE WILDLIFE (1)	MILES OF RIPARIAN (1)	RIVERS CROSSED (1)	RARE PLANTS (2)	FLOOD HAZARD (1)	SPRINGS WITHIN 1 MILE (2)	WATER (1)	WIND (1)	FAULTS WITHIN 1 MILE (2)	HIGH EROSION HAZARD	LATTICE CROSSED (2)	H-FRAME 345kV PARALLEL (1)	H-FRAME 115kV PARALLEL (1)	PIPELINE PARALLEL (1)	RAILROADS PARALLEL (1)	SUITABLE PARALLEL (1)	AG-LANDS TIMBER (1)	GRAVEL CROSSED (1)	TANKS (2)	CORRALS (2)	CONTINENTAL DIVIDE TRAIL (2)	ROADSIDE REST AREA (1)	RESIDENCES WITHIN 1 MILE ** (2)	RESIDENTIAL ROADS CROSSED (2)	CLASS A LANDSCAPES (1)	NO. OF HISTORIC SITES (1)	NO. OF NATIVE SITES (2)	NO. OF PREHISTORIC SITES (2)	BIOLOGICAL RESOURCES (3)	EARTH RESOURCES (3)	EXISTING AND FUTURE LAND USE (3)	VISUAL RESOURCES (3)	CULTURAL RESOURCES (3)	COMMENTS	ENVIRONMENTAL RANK	ESTIMATED COSTS (MILLIONS OF DOLLARS)																																																																																																																																																																																																																																																																																																																																																																																																																																																														

LEGEND:

- * ROUTE G PARALLELS HIGHWAY 180, A PROPOSED SCENIC ROAD, FOR 2.5 MILES
 - ** ALSO INCLUDES DISPERSED URBAN AREA NEAR DEMING, DUNCAN, FRANKLIN AND TYRONE
 - *** CONSTRUCTION METHOD INCLUDES HELICOPTER OR USE OF TRACKED VEHICLES
 - **** THESE ARE PRELIMINARY ESTIMATES, FINAL ACCESS REQUIREMENTS WILL VARY BASED UPON FINAL ENGINEERING DESIGN.
- MILEAGES SHOWN ARE FOR LINE LENGTH, REFER TO TABLE 3-1 IN DRAFT PA/EIS FOR CORRESPONDING ROAD MILEAGES.

- (1) MILES
- (2) NUMBER OF OCCURRENCES
- (3) MILES OF HIGH IMPACT/MILES OF MODERATE IMPACT
- (4) DISTANCE FROM ASSUMED CENTERLINE

NOTE: THE NO-ACTION ALTERNATIVE WOULD RESULT IN NO ADVERSE EFFECTS TO THE ENVIRONMENT OF THE STUDY AREA AND IS THE BASIS FOR COMPARING ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION ALTERNATIVES.

TABLE 1-1

locate the line on public lands to the maximum degree possible within environmental and engineering constraints. Alternatives when ranked from the least miles of private land to the most miles of private land are as follows: no-action, E, F, D, B, C, A and G.

Both the public and agencies expressed a desire to locate the transmission line along existing transmission corridors, wherever possible, to minimize environmental impacts. Several existing transmission lines exist in the study area and were paralleled by all alternatives to the extent possible. Alternatives when ranked from the most miles parallel to least miles parallel are as follows: E, F, G, C and D tied, and A and B tied.

Transmission line construction may indirectly cause a slight increase in fires as a result of improved access. These possible increases in fires will be offset by fire breaks and improved access. Under all alternatives considered the impacts will be low or none.

Road management planning will dictate access for construction. Detail road design will be completed following surveying and staking of the line in the field. Road designs will conform with planning standards of the BLM and USFS, as well as individual private landowners, prior to issuance of the easement to construct the line. The federal agencies will define the limits of construction rehabilitation based upon transportation and road management objectives. In some cases, roads will have locked gates, be blocked, or be completely obliterated, depending upon the management policy for an increase of roaded access into a specific area. Access roads are part of the project description and, as such, were considered in the impact assessments for each environmental resource.

Private property landowners expressed a concern for a decrease in the monetary value of their property as a result of the proposed transmission line and whether or not they would receive adequate compensation for property loss. Transmission lines potentially affect existing or future property values, though there is no conclusive evidence to suggest this. Landowners are compensated, based on fair market value of the land, for an easement or purchase of their land. There is no substantial difference in the effects to private property owners between alternative routes.

The USFS expressed a desire to minimize changes to the goals and objectives of the Gila National Forest Land and Resource Management Plan. The Plan recognized the existence of only one major high voltage utility corridor and the potential need for additional corridors. The potential need to amend the Forest Plan would be reviewed in conjunction with the evaluation of a line through the Forest as stated in the PA/EIS. Both the BLM and USFS' concerns are inherent in their stated mission to protect the quality of their land resources, while balancing the need for development when a need is shown.

The impact to Forest Plan goals and objectives, for all alternatives, in the following areas are not considered to be significant: range, recreation, timber, wildlife, riparian and cultural resources.

Route Comparisons

The comparative environmental consequences are summarized below for each of the final alternatives.

- Route A:
- Crosses most miles of Class A Scenic Quality landscapes of all routes (tied with Route B); crosses Plains of San Agustin; better than Routes C and D for impacts to residences.
 - Crosses near more springs than other eastern route (tied with Route B); nearly equal to other routes for erosion hazard.
 - Crosses near high density raptor nesting area and wintering area for bald eagles; tied with Route C for rare plant species habitat crossed.
 - Least miles of paralleling existing transmission lines (tied with Route B).
 - Most crossings of suitable timber and prime agricultural lands of all routes; best of eastern routes for crossings of proposed scenic roads and the proposed Continental Divide National Scenic Trail; crosses semi-private area.
 - Similar to Route B for potential cultural resource impacts; worst routes overall.
- Route B:
- Crosses most miles of Class A Scenic Quality landscapes of all routes; best of eastern routes for impacts to residences; most miles of high and moderate visual impacts of eastern routes.
 - Crosses near more springs than other eastern route (tied with Route A); near equal to other routes for erosion hazard.
 - Crosses more miles of sensitive wildlife species habitat of all routes; crosses most miles of riparian habitat of eastern routes.
 - Least miles of paralleling existing transmission lines (tied with Route A).
 - Most crossings (second to Route A) of suitable timber and prime agricultural lands for all routes; best of eastern routes (tied with Route A) for crossings of proposed scenic roads and the proposed Continental Divide National Scenic Trail; crosses semi-private area.
 - Similar to Route A in potential cultural resource impacts; worst routes overall.
- Route C:
- Does not cross any Class A Scenic Quality landscapes; fewest miles of high and moderate visual impacts of eastern routes; most residences within one mile of all eastern routes; crosses Plains of San Agustin.
 - Crosses near least number of springs than any route; nearly equal to all eastern routes for erosion hazard.

- Second best of eastern routes for minimizing crossing of sensitive wildlife habitat; best eastern route for crossing riparian habitat.
- Parallels most miles of existing transmission line (tied with Route D) of eastern routes.
- Least crossings (second to Route D) of suitable timber and prime agricultural lands of all routes; most crossings of proposed scenic roads and the Continental Divide National Scenic Trail of all routes.
- Best of eastern routes (tied with Route D) for potential impacts to cultural resources.

- Route D:
- Least miles (second best of eastern routes) of crossing Class A Scenic Quality landscapes; second fewest miles of high and moderate visual impacts of eastern routes.
 - Second best of eastern routes for crossing near springs; nearly equal to all eastern routes for erosion hazard.
 - Best of all routes for least crossing the habitats of sensitive wildlife species; worst route for miles of crossing riparian habitat; potential increased access into ferruginous hawk nesting area.
 - Most miles of paralleling existing transmission lines of all eastern routes (tied with Route C).
 - Least crossing of suitable timber and agricultural lands of all routes; second to Route C in most crossings of proposed scenic roads and the Continental Divide National Scenic Trail; fewest miles of private land of eastern routes.
 - Least miles of potential impacts to cultural resources of eastern routes (tied with Route C).

- Route E:
- Second best western route for least crossing of Class A Scenic Quality landscapes; lowest visual impacts of all routes.
 - Western routes tied for most number of crossings of all routes near springs; worst of western routes for potential soil erosion hazards.
 - Best of western routes for crossings of sensitive wildlife habitats; best route overall for number of crossings of riparian habitats.
 - Parallels existing transmission lines for nearly its entire distance.
 - Better than all eastern routes for number of crossings of suitable timber and prime agricultural lands (tied with other western routes); least crossings of the Continental Divide National Scenic Trail and proposed scenic roads; crosses through Saliz Pass paralleling Scenic Route 180; parallels boundary of Wilderness Area.
 - Best route overall for least miles of potential impacts to cultural resources.

- Route F:
- Worst of western routes for miles of crossing Class A Scenic Quality landscapes; crosses San Francisco River near recreation site; second best western route for overall visual impacts.
 - Western routes tied for most number of crossings of all routes near springs; second best of western routes for soil erosion hazard; better than all eastern routes.
 - Crosses through significant nesting habitat for peregrine falcon and bald eagle; crosses through area of dense populations of rare plants and animals; worst of western routes for miles of riparian habitat crossed.
 - Second best of western routes for miles of paralleling existing transmission lines.
 - Better than all eastern routes for crossing of suitable timber and prime agricultural lands (tied with other western routes); better than all eastern routes for crossings of Continental Divide National Scenic Trail and proposed scenic roads; worst of western routes.
 - Second best route overall for least miles of potential impacts to cultural resources.
- Route G:
- Best western route for least crossing of Class A Scenic Quality landscapes; highest miles of overall high and moderate visual impacts of all routes; substantial portion parallels Highway 180.
 - Western routes tied for most number of crossings of all routes near springs; best of western routes for soil erosion hazard; better than all eastern routes.
 - Crosses through significant nesting habitat for peregrine falcon and bald eagle; crosses through area of dense populations of rare plants and animals.
 - Worst of western routes for miles of paralleling existing transmission lines.
 - Better than all eastern routes for crossing of suitable timber and prime agricultural lands (tied with other western routes); better than all eastern routes for crossings of Continental Divide National Scenic Trail and proposed scenic roads; highest percentage of private land of all routes.
 - Worst of western routes for potential impacts to cultural resources; better than all of eastern routes.
- No-Action:
- Basis for comparison of routing alternatives - no adverse environmental impacts identified in the study area.

CHAPTER 2 - ALTERNATIVES/ISSUES AND CONCERNS

To aid in the federal agencies' decision-making, and facilitate evaluation of significance concerning changes in the Gila National Forest Plan, some material contained in the Draft PA/EIS has been reorganized, and requested material and analysis have been added into the following sections.

PUBLIC ISSUES AND MANAGEMENT CONCERNS

The following public issues and management concerns were identified in the public meetings, workshops, and during the project scoping process:

1. Visual Impacts

The scenic resources of the New Mexico landscape are unique in many respects, with rugged, mountainous terrain to rolling and flat deserts, grasslands and piñon-juniper hills. The landscape is largely undeveloped except for widely dispersed ranch headquarters locations and associated facilities, some active and abandoned mines, highways and roads, small urban areas, and a few linear and site industrial uses.

Land ownership is divided primarily between the State of New Mexico, private and federal lands administered by the USFS and BLM. The federal agencies have management policies to protect their lands from unnecessary degradation of scenic resources. State and private lands have no specific policies regarding visual resource protection. Specifically, the preservation of scenic and undisturbed lands near state-owned residences, residential, recreational and other high sensitive areas and highways, and recreation areas have been determined to be of primary importance to landowners and land managers.

2. Maximize Use of Public Lands (Federal and State)

Within the project study area, the land ownership is split between federal (USFS 25 percent and BLM 75 percent), state (20 percent), and private (22 percent). One of the major public concerns was to route the alternative corridors on public lands since the transportation line would have no benefit to private landowners. The plan is to route described in the PA/EIS was expanded to this plan by routing all alternatives on public lands to the maximum degree possible within environmental and engineering constraints. Where there was a choice of crossing public or private land, the private lands were always given priority for avoidance.

3. Use Existing Transmission Line Corridors

There are several existing transmission lines in the study area. The public expressed concern that the study should include analysis of existing lines and corridors.

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3. Use Existing Transmission Line Corridors

There are several existing transmission lines in the study area. It was expressed by the public and agencies in scoping meetings and workshops that the study should include analysis of routing alternatives along

existing transmission corridors, wherever possible, to minimize environmental impacts. In the project's planning process (see PA/DEIS), existing transmission lines were paralleled by all alternatives to the maximum extent possible.

4. Minimize Land Use Impacts

Impacts to land uses are defined as direct conflicts with the operation or use of a designated facility or area. A transmission line would result in a land use impact if it directly impeded a facility's current or planned use. For example, locating the right-of-way where there is a house or gravel extraction area would potentially require relocation of the use.

Many land uses are found scattered throughout the study area, with some concentration occurring in specific valleys or adjacent to urban areas. Land uses include ranch headquarters and associated ranching facilities (water tanks, wells, corrals, buildings, etc.), roads and highways, extraction activities (gravel pits, etc.) and other industrial areas, timber areas, agricultural fields and operations, urban and developed areas, research facilities, recreational facilities, and legally protected areas.

The planning process described in the PA/DEIS responded to the issue with all routing alternatives avoiding known land uses where possible.

5. Minimize Impacts to Cultural Resources

New Mexico is rich with historic and prehistoric resources. The first Spanish explorers noted archaeological ruins that are still conspicuous across the landscape. Professional archaeological research within the area of the Arizona Interconnection Project has been pursued for about a century, but only relatively small portions of the area have been inventoried based on modern standards of cultural resource survey. Nevertheless, thousands of sites have been previously recorded in the area.

Archaeological evidence indicates that the project area has been occupied since about 10,000 BC. Historic occupation of the area has existed since the mid-1500s. Today the project area remains largely rural.

All major known cultural resources were avoided, where possible, during alternate route selection as described in the PA/DEIS. In addition, along the approved route a detailed cultural survey will be completed.

6. Minimize Impacts to Biological Resources

The vegetation of the project area is diverse, encompassing 11 vegetation communities ranging from Chihuahuan Desert species to the sub-alpine species found at higher elevations in the Gila National Forest. The wildlife species found are also quite diverse considering the immense range of habitat and the relatively uninhabited and undisturbed natural settings.

Nearly 200 species of state or federally listed sensitive plants have been identified.

The area contains excellent habitat for big game, including mule deer, elk, bear and turkey. A number of sensitive raptors occur near or within the study area, including Swainson's hawk, ferruginous hawk, zone-tailed hawk, black hawk and bald eagle. Many other raptors nest in the area. Additionally, there are numerous state and federally listed invertebrate and vertebrate sensitive species.

Significant riparian habitats occur within the region and are highly sensitive because of their very limited occurrence and very high value as wildlife and rare plant habitat.

Wetlands and aquatic habitats, like riparian habitats, are generally associated with the larger river systems in the area. These aquatic and wetland habitats are important because of their position in a notably arid portion of the United States, and because of the habitat they provide to numerous animal and plant species, some of which are listed among the threatened, endangered or otherwise sensitive biota of the United States and the states of Arizona and New Mexico.

The planning process, described in the PA/DEIS, responded to the issue by avoiding the most sensitive areas, where possible, on all routing alternatives.

7. Property Values and Compensation

Involved landowners are concerned that the proposed transmission line will cause a decrease in the monetary value of private property. They are also concerned about receiving adequate compensation for property loss or other adverse impacts to private property.

8. EPE Need for Project

EPE has proposed to construct a 345kV transmission facility. The purpose of the proposed interconnection project is to supply transmission capacity to transport baseload and economy energy to its Texas and New Mexico customers, and to meet transmission system reliability criteria for single line outage and voltage drop. Completion of the project will help reduce the dependence on electricity from oil and gas

generators, furnish access to the economy energy market, enhance system-wide reliability, and help meet EPE's forecasted need for power by providing firm transmission capacity.

The Powerplant and Industrial Fuel Use Act (PIFUA) of 1978 discourages use of oil and gas for generating electricity. Nearly 15 years ago, EPE began reversing its base generation from 75 percent oil and gas (locally generated) to 75 percent coal and nuclear (from remote sources). The proposed project will be a major step in providing baseload coal and nuclear energy and reduce the dependence on oil and gas for generation.

EPE has made significant savings for its customers by purchasing economy energy over the interconnected transmission grid. In order to take advantage of further savings on the economy energy market, EPE must strengthen its system by developing independent transmission paths to take advantage of remote generation sources.

Because of the shift to remote sources of energy, the reliability of the transmission system to supplying customers becomes critical. The addition of an independent transmission system from an external source strongly enhances that reliability. In the event of a single line outage, EPE customers would become more resistant to experiencing voltage drops or power outages.

Firm transmission capacity is limited to the EPE system to about 400 MW between 1984 and 1986, with little or none being available beyond 1986. This project would provide EPE with transfer capabilities up to 250 MW from sources in Arizona and New Mexico. With this, EPE would further its need to transport firm power.

9. Effects of Alternatives on Agency Land Management Plans

The Gila National Forest Land and Resource Management Plan recognizes only one existing major high voltage utility corridor within the Forest. The existing TEP corridor includes two structures: a single circuit 345kV and a double circuit 345kV with one circuit installed and one circuit position reserved for future use by TEP. The environmental impact statement for the plan, however, recognized the potential need for additional corridors and stated that "The Forest will evaluate requests for additional utility corridors when the need arises." The Environmental Impact Statement also states that the resulting impacts and the potential need to amend the Forest Plan would be reviewed in conjunction with the evaluation of any power line route that would cross the Forest. The concern is that changes in Plan goals and objectives be minimized.

The BLM plans recognize corridors for planning purposes; however, it does not presently recognize a corridor for much of the proposed routes that have been evaluated in the draft document. Included in the

Environmental Impact Statement was the plan amendment that determined which, if any, public lands within the planning area should be designated as a right-of-way corridor. The end results would be an amended plan to allow for the right-of-way corridor. This issue developed when EPE filed an application for a right-of-way grant. As part of this plan amendment process, BLM and USFS involved the public, other federal agencies, and state and local governments.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

Six general alternatives were evaluated by EPE to meet the needs for providing additional power in its service area and for displacing oil and gas energy sources with other sources. These alternatives were: (1) Energy Conservation, (2) Alternative Generation Sources, (3) Alternative Transmission Systems, (4) Alternative Transmission Technologies, (5) No Action, and (6) the Proposed Action. The first four of these were considered and eliminated, for the reasons described in the following section.

Alternatives Eliminated from Consideration

Energy Conservation

Energy conservation refers to elimination of wasteful or unnecessary uses of electrical energy. It has the advantage of reducing energy consumption with no documented adverse environmental impacts. However, factors such as high capital cost (e.g., of solar, water, and space heating equipment), cost-effectiveness and public acceptance may inhibit the implementation of some energy conservation programs.

EPE has developed and put into effect numerous energy conservation and load management programs to educate customers on the necessity of conserving energy, and to encourage the prudent use of electricity through the application of programs appropriate for each class of customer. Energy conservation, however, only affects energy use, and cannot be considered an alternative action to meet the stated need for the project.

Although conservation, as defined here, is not sufficient as an alternative to the project, the proposed action could be considered an oil- and gas-conservation effort. Firm power from Springerville Generating Station would be distributed by the transmission line capacity provided by the project, thereby displacing oil and gas or other types of non-renewable power generation in EPE's service territory. Because of the criteria stated above and because it would not satisfy the needs or objectives of the project, energy conservation was eliminated as a viable alternative.

Alternative Generation Sources

Toward achieving its goal of fuel diversification, EPE identified three alternative sources of power not fueled by oil or natural gas: the Springerville-Coronado-Cholla area in TEP's system, the Four Corners-San Juan area in PNM's system, and the PVNGS in Arizona Public Service Company's system. EPE considered several general paths from these sources to El Paso. The establishment of a coal-fired plant near El Paso was also evaluated as an alternative generation source.

Existing transmission line facilities between the three existing generating stations and the EPE system are either fully utilized or committed to future planned requirements by their owners. To be able to wheel (or transport) power into the EPE system from any of the three sites of generation would require additional transmission line construction by EPE and possibly other utilities.

In evaluating potential construction of a new transmission line, engineering, cost and licensing are considerations. For these reasons, the Springerville source was considered most feasible and economic among the non-local generation alternatives.

The establishment of a local (near El Paso) coal-fired generating plant would further diversify EPE's fuel mix and would lessen its dependence on expensive non-renewable petroleum fuels. Such a plant could also lessen the requirement for transmission facilities, such as the proposed project, to import remotely generated coal and nuclear power. However, a new generating plant is not needed until the late 1990s since existing and planned electrical generating capacity of EPE and other utilities appear adequate to supply reliable electric service to EPE's customers in the near future. Construction of a new power plant would cause a significant financial impact to EPE due to the costs involved. Also, a coal plant would fix the costs of generating power, thus reducing the flexibility obtained by adding firm transmission capacity through the proposed project. As system changes occur and as existing generating plants are retired, a new coal plant could be a consideration for replacing firm generating capacity, which is not required at the present time. For the reasons stated, alternative generation is not considered a viable alternative at this time.

EPE has investigated and participated in the development of several alternative energy generation sources, including cogeneration, pumped hydro-electric, solar and biomass. In 1983 EPE investigated the potential to utilize biomass generation in the Mesilla Valley. The project, completed in cooperation with the State of New Mexico, was suspended because of poor economic feasibility. Experimental projects include photovoltaic, solar repowering, solar pond, and wind mapping and wind electrical generation. Photovoltaics and the solar pond project, as experimental technologies, have proven to be successful. The solar repowering project was submitted to the Department of Energy for final design and testing, and was not accepted. The testing of wind generating projects are ongoing as experimental technologies. The recent

formation of a "Cogeneration Team" has led to consideration, with private individuals and companies, of cogeneration installations. Although research and planning continues for testing and development of these and other alternative generation sources, the costs are prohibitive or the technologies are not commercially available until the 1990s, and are not considered viable alternatives.

Alternative Transmission Systems

EPE evaluated the feasibility of increasing power purchases from other utilities and wheeling power over existing transmission lines utilizing interruptible capacity. This option was not considered viable because the current transmission system is operated at capacity whenever possible. Any increase in power brought into the system over existing facilities would greatly reduce the reliability of the entire system. Within the present system, if one of the transmission lines is lost, a large number of customers would experience loss or reduction of power until local generation was available to serve the load or until the line could be restored to service. Transporting additional power over existing lines would decrease the stability of the system and make outages more frequent and more severe. One consideration for the proposed action is to increase EPE's capacity to buy power on an economy basis and at the same time increase the reliability of the system. The proposed system best meets the needs of the project; therefore, alternative transmission systems are eliminated from further consideration.

Alternative Transmission Technologies

Voltages

The predominant transmission voltages used in southern New Mexico are 115kV and 345kV. EPE chose 345kV for this project because it can carry more than three times the current of a 115kV line and is still economical. The higher voltage of 500kV was not proposed because of the higher cost of the materials, different construction techniques, and the increased right-of-way requirements. Additionally, this increase in capacity could not be fully realized due to the operation of a 500kV line in a 345kV system. If the 500kV circuit, operating at its maximum capacity, opens due to a fault, it will cause a redistribution of power which can overload the remaining 345kV circuits. The only effective way to mitigate this situation would be to construct a second 500kV line to cover those contingencies, increasing project costs and environmental impacts. This alternative is not considered acceptable.

Direct Current

EPE did not pursue this project as a DC transmission line due to the cost of the DC terminal installations. To make this project a DC line, EPE estimated that the terminal equipment cost would roughly equal the line cost for a 345kV

AC line. This would double the cost for the project and provide no substantial benefits. The power flow over a DC line would be more controllable, but this benefit is not thought to justify the increased project cost.

Underground Construction

There has been underground construction of transmission systems in the United States since the late 1920s for lower voltage distribution lines and some high voltage (HV) systems. However, most HV (115kV or above) underground installations have been constructed in congested urban areas, or as leads from generating plants or to substations. It is important to note that underground HV transmission lines have markedly different technological requirements than lower voltage underground distribution lines, and are vastly more complex and costly, primarily because of problems associated with dissipating cable heat. Design parameters and thermal limitations prohibit the use and application of underground transmission cable systems for long distance transmission. For these reasons alone, without consideration of the cost factor, there are no underground transmission systems in the United States at voltages 230kV and above exceeding approximately 15 miles in length.

The basic cost of undergrounding a HV line would be many times the cost of overhead construction. In addition to the cable, pipe and oil, ancillary facilities such as cable terminators, oil-pressurizing, and pumping and reactor stations would be required to complete the underground system. Oil-pressurizing and pumping-plant facilities would be required every 7 to 10 miles along the transmission route and termination stations.

While underground lines are relatively immune to weather conditions, they are vulnerable to dig-ins, washouts, seismic events, and cooling system failures. These complications can result in service outages lasting days or weeks, rather than the hours usually required to correct overhead failures. Outages of long duration would be unacceptable for a circuit carrying bulk power to serve area consumers.

During construction, the environmental impacts of an underground transmission line would be similar to those from pipeline construction, which requires a continuous line of trenching and backfilling between terminal points. As a result, considerably greater adverse environmental impacts could be expected than those from construction of an overhead line. Access to an underground line for repairs and regular maintenance would be required throughout its length in contrast to the overhead system which normally requires structure access only.

The principal environmental benefits of undergrounding a transmission line involve reduction of adverse visual and aesthetic impacts (although ancillary facilities on or adjacent to the right-of-way would be visible). However, on balance, the environmental benefits of undergrounding do not appear to outweigh the costs and potential adverse impacts.

Considering the technical complications, economic and environmental costs, and accessibility, an underground system--either in part or in total--is not a viable alternative.

New Methods of Transmission

No method different from those described above is presently available for the economical bulk-power transmission of electric energy from a generating source to load centers. While there is continuous research on the possibilities of microwave and laser transmission of energy, these methods have not been developed to the point where they could be utilized for high capacity long distance transmission. Therefore, they cannot be considered as viable alternatives.

Routing Alternatives

Routing alternatives for the proposed transmission line were determined through a process of documentation and elimination of those alternatives that had serious routing constraints, either as a result of environmental or engineering considerations, or had an obvious environmentally preferred routing alternative (similar origin, destination and routing). Alternative corridors were eliminated through various methods:

- Documentation of regional level environmental data where one routing alternative joining the same end points as another would clearly be preferred, and would likely result in greater environmental compatibility. Environmental data were reviewed by the project Steering Committee (Chapter 2 of the Draft PA/EIS) and recommendations for elimination of routing alternatives were made during agency review and public scoping meetings.
- Documentation of public input during the public scoping meetings and public workshops. Public opposition because of environmental concerns identified by the regional environmental study and the Steering Committee, and because of routing on private lands.
- System planning studies conducted to determine if the alternatives under consideration would perform to project standards and objectives.

Regional Environmental Study/Public and Agency Scoping

Initial routing alternatives were identified through a Regional Environmental Study (refer to Chapter 2 of Draft PA/EIS). Regional level environmental data were used to determine the relative environmental compatibility of the alternative corridors. Alternatives with unacceptable environmental consequences were recommended for elimination from further consideration by the project Steering Committee. The recommendations were reviewed by the

public and agencies during the scoping process (see Chapter 2 of Draft PA/EIS).

A series of corridors identified through the Apache-Sitgreaves Forest in Arizona was recommended for elimination because of public and agency concern for impacts to recreational uses and sensitive biotic species, and by concurrence of the Apache-Sitgreaves and Gila National Forest. Segments of these alternative corridors were of particular concern to the Springerville Ranger District of the USFS due to its widespread use and popularity for dispersed recreation.

Other alternatives considered by the Steering Committee and recommended for elimination included corridors crossing the Plains of San Agustin through the electrical interference zone of the VLA, or the proposed extension of its southwestern arm (see Electrical Effects, Chapter 5 of Draft PA/EIS).

Another alternative passed through a narrow "window" between the Gila and Aldo Leopold Wilderness Areas, paralleling State Highway 60; and following the Mimbres River Valley south of USFS lands was also recommended for elimination. This corridor was eliminated during project scoping meetings by public concern for visual impacts and sensitive cultural sites.

A corridor in the Gallup Mountains was recommended for elimination by the Steering Committee because of concern by the USFS for potential impacts to cultural resources. Input received during the scoping meetings confirmed this recommendation.

Other Routing Alternatives Eliminated

EPE performed computer simulations of the interconnected power systems to study the electrical performance of the routes identified in the regional environmental studies. These power flow studies simulated the power that would be flowing in all of the transmission lines represented and the voltages that would exist at each substation. EPE recommended the routes identified along the northern edge of Catron and Socorro counties, then south along I-25 and the Rio Grande be eliminated because of poor electrical performance.

Due to the length of these alternative corridors, the power expected to flow during normal conditions would be too low to justify the line's expense. This extra length would cause some of the power expected to flow on this line to use other lines not owned by EPE. Additionally, under emergency conditions when major lines are out of service, the longer route's proportionate share of power was lower than industry guidelines. EPE, as a member of the Western Systems Coordinating Council (the Western-most National Electric Reliability Council), has adopted the Council's guidelines for planning future transmission lines and uses those criteria to assure continuity in the inter-utility studies.

Description of Alternatives Evaluated in Detail

No Action

The no-action alternative required for consideration under NEPA regulations has been interpreted in this PA/EIS to mean that no new transmission facilities would be constructed by EPE between TEP's coal-fired generating plant near Springerville, Arizona and EPE's system. Under the no-action alternative, EPE would attempt to meet the needs of anticipated power requirements with the existing facilities and fuel sources, along with various mitigating measures to assure the continuance of firm transmission capacity.

Alternative Transmission Line Corridors

Identification of Routing Alternatives

Alternative routing corridors were identified through the scoping process (see Chapter 2 of Draft PA/EIS), which included a regional environmental study of much of southwestern New Mexico and the southeastern edge of Arizona. Subsequently, detailed environmental studies were conducted to form the basis for comparing those alternatives. A major portion of these studies was directed towards identifying alternative corridors (subsequently, routes) to be assessed in the detailed corridor studies. Initial study corridors were selected between the Red Hill area and Luna Substation through efforts of the project Steering Committee, use of existing data gathered through agency contacts with federal, state and local agencies, and by using existing data previously developed for other projects in the region.

Through a joint effort involving EPE, BLM USFS and WIRTH, alternative corridors were carefully reviewed through numerous field and aerial surveys. The objective of the review was to refine the routing alternatives, delineate assumed centerlines for detailed corridor studies, and to determine whether it is technically possible to parallel existing corridors, specifically through Saliz Pass, at the San Francisco River crossing; and south of Nutt along Highway 26. In addition, access road requirements (see Table 3-1 of Draft PA/EIS), including amount of potential disturbance (e.g., constructing new roads, constructing spur roads to tower locations from existing roads, or upgrading existing roads), and vegetation removal were major considerations during field review. Figure 3-5 in the Draft PA/EIS illustrates the alternative corridors, which are delineated as numbered "link segments" for ease in comparing routing alternatives. A link is defined as a segment of route alternative sharing common endpoints with adjacent links. Endpoints of a link are determined by the location of intersection with other segments (links) of other routes. Further, combination of the links from the Red Hill tie point to the Luna Substation make up the alternative routes.

Following completion of the regional studies (Chapter 2 of Draft PA/EIS), review of existing studies, public input and scoping meetings, agency input and review, and review by the project Steering Committee, approximately 900

miles of alternative corridors were studied in detail (Figure 3-5 of Draft PA/EIS). Study areas were established along the assumed centerline for each corridor, ranging in widths from two to six miles depending upon the needs of and concerns for each resource study (discussion in Chapter 4 of Draft PA/EIS). Detailed environmental data were compiled at a consistent scale and level of detail within these study corridors.

These data provided the baseline for identifying specific impacts, relative levels of impacts, appropriate mitigation measures, both generic and specific, and comparing the routing alternatives. Chapter 5 of the Draft PA/EIS discusses the mitigation measures to which the project sponsors have committed. The effectiveness of specific mitigation measures, recommended on a case-by-case basis, resulted in the identification of the residual, or unavoidable adverse impacts to the environment along each alternative corridor. Detailed results of the inventory, impact assessment and mitigation planning are provided in the resource reports (Technical Report available for review at BLM or USFS offices). Impact zones within alternative corridors were defined as one-half mile wide, and were delineated from the assumed centerline identified by USFS, BLM, EPE and WIRTH on the assumption that the final engineered right-of-way would be within that corridor.

Several adjustments, modifications and additions to the assumed study centerline were made during the corridor studies to alleviate direct conflicts (e.g., glide slope interference zone for a private airstrip on Link 17a). In July 1986, the USFS requested the addition of several alternatives to Links 8, 9 and 10 near Tularosa Mountain and State Highways 32 and 12. These link segment additions were made to avoid suitable timber lands, reduce visual impacts at road crossings, and avoid a private airstrip. Interpretation of aerial photography obtained for the alternative corridors resulted in the adjustment of numerous miles of assumed centerlines primarily where paralleling existing 345kV transmission lines (Links 4, 5, 38, 39, 41 and 46). It also resulted in the addition of Link 1a. Link 47 near Black Mountain was adjusted to avoid conflict with the Lower Gila Box WSA and potentially sensitive biotic resources as identified by the New Mexico Department of Game and Fish. Link 1b was also adjusted to avoid the Mesita Blanca and the Eagle Peak WSAs. Concern for environmental effects to the Wahoo Canyon area, and engineering constraints, resulted in the addition of Link 17c near What-Not Tank in the Black Range.

Description of Routing Alternatives

1. Alternative Route A. Mangas-North Continental Divide Alternative

The Mangas option of the route (Links 1a, 1b and 2a) passes near the Mesita Blanca and the Eagle Peak WSAs and through the Mangas Mountains. The North Continental Divide Option would cross Highway 12 east of Old Horse Springs before crossing diagonally across the Plains of San Agustin north-east of Bat Cave. It would continue easterly along the northern boundary of the Continental Divide WSA and across the northern end of the Black

Range. Turning south, paralleling the west side of Highway 52 and the east edge of the Black Range, the alignment would cross Highway 52 near Wildhorse Canyon before continuing south into Cuchillo Range on the east side of Iron Mountain. Another crossing of Highway 52 would occur west of the intersection with NM 142. The lower portion of this route crosses grasslands and creosote flats in ridge and canyon plains west of Truth or Consequences, and finally parallels NM 26 into Deming.

2. Alternative Route B. Mangas-South Continental Divide Alternative

The Mangas option of the route and the southern segment of the route is the same as that described for Route A. The South Continental Divide option of the route would cross the western edge of the Plains of San Agustin roughly parallel to FS Road 47, before turning east on the south side of the Continental Divide WSA. It would cross through two rugged portions of Gila National Forest lands near Railroad Canyon and Silver Creek in the Black Range before crossing Highway 52 west of Iron Mountain. The alignment would continue south through the Cuchillo Mountains crossing Highway 52 as described for Route A.

3. Alternative Route C. Tularosa-North Continental Divide Alternative

The Tularosa portion of this route crosses through the western edge of the Gallo Mountains, and parallels State Highway 12 on National Forest System lands before crossing into the open western end of the Plains of San Agustin. The North Continental Divide Option of this alternative crosses north of the Continental Divide WSA and across the northern edge of the Black Range west of Alamosa Creek. The route crosses Highway 52 and Alamosa Creek before traversing the Cuchillo Mountains east of Iron Mountain. The corridor would then run east on the north side of State Highway 52 before crossing it west of NM 142. The southern portion of the route is the same as that described for Routes A and B.

4. Alternative Route D. Tularosa-South Continental Divide Alternative

The Tularosa portion of the route is the same as that described for Route C. The South Continental Divide portion is the same as that described for Route B. The southern portion is the same as that described for Routes A, B and C.

5. Alternative Route E. TEP-Greenlee-Hidalgo-Luna Alternative

The TEP-Greenlee portion of this route would parallel the existing TEP 345kV corridor south from Red Hill, into the Apache-Sitgreaves National Forest, and across the San Francisco River east of Alpine, Arizona before passing through Saliz Pass. It then continues south to a second crossing of the San Francisco River until it would tie into the Greenlee Substation.

From the Greenlee Substation this route would follow the existing 345kV transmission line south across the Gila River near Duncan, then southeast

through the Animas Valley and eventually turning east to roughly parallel several miles on the north side of I-10.

6. Alternative Route F. TEP-Glenwood-Black Mountain-Luna Alternative

This route is the same as that described for Route E from Red Hill through Link 41. It would then diverge southeast from the existing TEP corridor and cross the San Francisco River near Glenwood before continuing south across the low ranges and valleys between Bear Valley and Redrock Mesa.

It would then cross near the Blue Creek and Lower Gila Box WSAs and Black Mountain before crossing the Gila River at the Lower Box ACEC. After crossing the Gila, the route would continue south to join the existing 345kV corridor into the Luna Substation.

7. Alternative Route G. TEP-Glenwood-Highway 180 Alternative

This route is the same as that described for Route F from Red Hill through the crossing of NM 78 south of Glenwood. It would then roughly parallel Highway 180 across the Gila River, south of Silver City and into Luna Substation.

Comparison of Alternatives Studied in Detail

The no-action and seven routing alternatives are compared in this section. Because biological, visual and cultural resources are the only significant, unavoidable adverse effects of all alternatives, the following environmental comparison will be restricted to these elements.

Additional environmental data on the alternatives are contained in the Draft PA/EIS and summarized on Table 3-2, and on Table I-1 of this document.

Biological Resources

Route A - Potential long-term impacts would occur to the pronghorn special use area, high density raptor nesting areas, and sensitive plant species. Riparian area would be crossed for 0.6 mile.

Route B - Impacts would be similar to Route A, although lower potential impact to nesting raptors and pronghorn use areas than Routes A and C. Riparian area would be crossed for 1.9 miles.

Route C - Poses potential long-term impact to nesting raptors and to pronghorn special use areas. Riparian habitat would be crossed for 0.5 mile.

Route D - Similar to Route C except some potential raptor nesting areas and pronghorn special use areas would be avoided. (This route preferable to Route C for Biotic Resources.) Riparian area crossed for 3.1 miles.

Route E - Some long-term residual impacts at river crossings from avian collision hazard. Riparian area crossed for 0.4 mile. This is preferred route biologically, as it generally crosses least miles of sensitive habitat types.

Route F - Potential impacts to eight federally listed or candidate wildlife species. Worst route for crossing of sensitive wildlife habitats. Riparian area crossed for 0.9 mile.

Route G - Similar to Route F excepting fewer miles of sensitive wildlife habitats crossed, but exceeds Route F because of additional state listed wildlife and plant species. Riparian area crossed for 0.7 mile.

No Action - No adverse effects to the Biological Resources.

Visual Resources

Route A - Significant impacts would occur from potential crossings of an alternative route of the Continental Divide Trail, alignment within 0.5 mile of a residence, and crossing New Mexico 32 and other residential roads and highways. It would cross 9.5 miles of Class A landscape. High visual impact would occur for 32.0 miles.

Route B - Overall the visual impacts would be similar to Route A. Class A landscapes would be crossed for 9.5 miles. A total of 37.8 miles of high visual impacts would result.

Route C - Significant impacts would result from the line crossing within 0.5 mile of residences, the crossing of New Mexico 32, and other residential roads and highways. No Class A landscapes would be crossed. A total of 19.9 miles of high visual impacts would occur.

Route D - Similar to Route C, significant impacts would occur from alignment within 0.5 mile of residences, the crossing of New Mexico 32 and other residential roads and highways. Class A landscapes would be crossed for 7.7 miles. High impacts for 24.0 miles would result.

Route E - This alignment, because it generally parallels an existing corridor, would cause no significant impacts to recreation areas or residences. This route has the least miles of visual impacts. Class A landscape would be crossed for 2.5 miles. Miles of high impact anticipated is 1.9 miles.

Route F - Significant impacts would occur at the crossing of the San Francisco and Gila rivers, and alignment within 0.5 mile of residences. Class A landscape would be crossed for 2.8 miles. High impacts would result along 18.2 miles of the route.

Route G - Similar to Route F, significant impact would occur from the crossing of the San Francisco and Gila rivers, and open views of the line within 0.5 mile of residences. Class A scenic landscape would be crossed for

2.1 miles. A total of 41.3 miles of high impact would result. This route would affect more residences than any other routing alternative.

No Action - No adverse effects to the Visual Resources.

Cultural Resources

Route A - High impact - 7 miles. Cultural sites identified - 102.

Route B - High impact - 6 miles. Cultural sites identified - 90.

Route C - High impact - 8 miles. Cultural sites identified - 59.

Route D - High impact - 7 miles. Cultural sites identified - 51.

Route E - High impact - 2 miles. Cultural sites identified - 112.

Route F - High impact - 3 miles. Cultural sites identified - 119.

Route G - High impact - 4 miles. Cultural sites identified - 97.

No Action - No adverse effects to the Cultural Resources.

The western routes (E, F and G) would cross fewer miles of potential high impact due to more miles of lower sensitivity open desert landscapes in the southern portions. The western routes contain a greater number of known sites and recorded sites inventoried as a result of previous site specific transmission line surveys and national forest projects. The eastern routes have not received similar intensive surveys. It is highly probable that numerous sites exist along the eastern routes comparable to what has been identified on the western routes.

Issue Comparison by Alternative

The issues and concerns raised as a result of the public meetings and workshops are compared for each routing alternative. More detailed discussions are contained in the Affected Environment and Environmental Consequences chapters of the Draft PA/EIS. Although routing preferences differ by issue, all alternatives are environmentally acceptable.

Issue 1 - Visual Impacts

The following table summarizes the Visual Management Classes (BLM) and the Visual Quality Objectives (USFS) for each routing alternative.

AGENCY VISUAL MANAGEMENT CLASSES (miles crossed)

Routes	VRM (BLM)			VQO (USFS)			
	II	III	IV	R	PR	M	MM
A	23.7	83.5	80.1	2.6	16.1	13.0	-
B	15.2	73.9	73.6	5.0	28.4	24.9	0.5
C	23.6	81.5	75.0	1.1	14.0	9.9	9.0
D	12.6	73.3	68.5	3.0	24.2	21.8	9.5
E	0.8	101.6	33.6	12.7	32.1	29.6	-
F	13.4	76.0	44.5	12.9	37.4	16.7	-
G	31.9	50.6	26.9	12.9	37.4	16.7	-

II = Class II

III = Class III

IV = Class IV

R = Retention

PR = Partial Retention

M = Modification

MM = Maximum Modification

Review by the BLM and USFS personnel have found changes to visual management objectives to be acceptable as a result of the project. Detailed definitions of the visual management classes, and locations and extent of management class changes are found in Chapter 5 of this document. Location and extent of visual impacts to viewers and to scenic resources are found in Appendix A.

The ranking of alternatives is relative. All alternatives will have some adverse effect on the scenic quality. Alternatives when ranked from the least miles of high impact to the most miles of high impact are as follows: no-action, E, F, C, D, A, B and G.

Issue 2 - Maximize Use of Public Lands (Federal and State)

The following table shows the land ownership in miles crossed for each routing alternative.

LAND JURISDICTION (miles)

<u>Route</u>	<u>Federal</u>	<u>State</u>	<u>Private</u>
A	114.7	47.0	57.3
B	140.0	28.2	53.3
C	112.5	46.6	55.0
D	134.9	27.0	51.0
E	120.8	61.0	28.6
F	108.5	53.7	38.7
G	80.4	35.2	60.8

Alternatives when ranked from the least miles of private land to the most miles of private land are as follows: no-action, E, F, D, B, C, A and G.

It should be noted that the land use impact analysis was based on resources and land uses, and not on land ownership or jurisdiction.

Issue 3 - Use Existing Transmission Line Corridors

Existing transmission line corridors are paralleled by each of the alternatives as follows:

<u>Route</u>	<u>Miles</u>
A	25.8
B	25.8
C	34.5
D	34.5
E	197.9
F	133.9
G	69.7

Alternatives when ranked from the most miles parallel to least miles parallel are as follows: no action, E, F, G, C and D tied, and A and B tied.

Issue 4 - Minimize Land Use Impacts

The following table shows various land uses by alternative routes:

Routes	Miles Crossed/Paralleled					Number of Crossings					No. Within 1 Mile K
	A	B	C	D	E	F	G	H	I	J	
A	4.6	-	4.4	3.2	.2	3	4	1	3	5	25
B	4.9	-	4.7	-	.2	3	4	2	4	3	24
C	1.2	.4	-	3.2	.2	3	5	5	3	5	33
D	1.5	.4	.3	-	.2	3	5	2	4	3	32
E	6.9	-	.3	-	-	1	1	-	1	2	43
F	6.9	-	.3	-	-	1	1	-	1	5	25
G	6.9	-	.3	-	-	3	-	1	-	3	76

A - Suitable Timber

B - Prime Agriculture

C - Semi-Primitive Area

D - Proposed VLBA (Radio Telescope)
Interference Zone

E - Proposed Development

F - Proposed Scenic Road

G - Gravel Pit

H - Continental Divide Trail

I - Continental Divide Trail-Alternative

J - Stock Tank/Corral

K - Residences

Impacts to land use are not significantly different for any alternative routes. The no-action alternative would avoid negative affects to land uses. Mitigation would be effective in reducing the level of impact in all cases to low or none.

Issue 5 - Minimize Impacts to Cultural Resources

The following table summarizes archaeological, historical and Native American resources sensitivity for each routing alternative.

ARCHAEOLOGICAL/HISTORICAL SENSITIVITY (Miles)

Routes	High	Moderate	Low
A	82.0	99.0	39.0
B	72.0	117.0	31.0
C	76.0	99.0	40.0
D	65.0	116.0	34.0
E	39.0	85.0	84.0
F	49.0	95.0	54.0
G	48.0	113.0	12.0

Alternatives when ranked from the least miles of high and moderate impacts to the most miles of high and moderate impacts are as follows: no-action, E, G, F, D, C, A and B.

Issue 6 - Minimize Impacts to Biological Resources

The following table describes the extent of occurrence of special-status species and riparian crossings for each alternative.

SENSITIVE BIOLOGICAL SPECIES (Miles)

<u>Routes</u>	<u>Peregrine* Falcon</u>	<u>Bald* Eagle</u>	<u>Sensitive Wildlife</u>	<u>Rare Plants</u>	<u>Riparian Crossings (Number)</u>
A	-	-	16.5	39.1	3
B	-	-	39.1	39.6	3
C	-	-	16.5	39.1	2
D	-	-	2.5	39.6	2
E	-	0.1	66.2	39.7	7
F	16.1	16.2	82.5	39.7	7
G	16.1	16.2	55.1	20.1	7

*Agency identified regular occurrence areas.

There would be no high impacts in any alternative. Alternatives when ranked from the least miles of moderate impact to the most miles of moderate impact are as follows: no-action; A, B, C and D (tied); E; F and G (tied).

Issue 7 - Property Values and Compensation

While various studies have been conducted, there is no conclusive evidence to suggest that transmission lines will reduce property values. Some studies have found no substantial decrease in value attributable to transmission lines, while others have shown the market value of property to be reduced. Potential visual impacts could possibly attribute to alterations of property values.

Landowners are compensated for an easement on or purchase of their land. Compensation is based on the fair market value of the land, as in the case where an easement is acquired based on the extent to which the use of the land is limited by the right-of-way. Any conflicts concerning the amount to be paid are to be resolved through negotiation or condemnation proceedings. There is no substantial difference between alternative routes. The no-action alternative would not affect property values.

Issue 8 - EPE Need for Project

EPE has proposed to construct the Arizona Interconnection Project to meet its responsibility to provide adequate supplies of reliable and economical electricity to its customers. The proposed project would (1) help reduce dependence on oil and natural gas for generating electricity consumed in its service territory, (2) furnish access to the economy energy market, (3) enhance system reliability, and (4) help meet EPE's forecasted need to transport power by providing firm transmission capacity.

All routing alternatives would serve the project's purposes. The no-action alternative does not satisfy the project purpose and need.

Issue 9 - Effects on Agency Land Management Plans

BLM

Under the Federal Land Policy and Management Act of 1976, BLM must manage public lands under the principle of multiple use, managing the various resources to best meet the needs of the public and our society. The conflict in BLM's mission is to protect the quality of the land resources, environment and public values while permitting development and uses in a cost effective manner, such as a transmission line, which will help meet society's needs. The effects of the Management Framework Plans/Resource Management Plans (MFP/RMP) for the Southern Rio Grande Planning Area (BLM 1982), White Sands RMP (1986), and Divide Planning Area (BLM 1982) are addressed in the Draft PA/EIS in accordance with BLM planning regulations (43 CFR 1600 Subpart 1610.5). The Record of Decision would result in amending the above-mentioned BLM plans to allow for the granting of a 100-foot right-of-way for EPE's transmission line.

USFS

The Gila National Forest Plan has been implemented. An analysis must be made on all Routing alternatives in terms of impacts to the overall Forest Plan Goals and Objectives.

The primary resource areas that could potentially be affected by a power line across National Forest system lands are range, recreation opportunities, timber, wildlife and fish habitat, riparian, visual, and cultural resources.

1. Range - Minor effects to grazing capacities may occur as a result of vegetation removal during construction or operation of the power line. The displacement of grazing land by access roads where vegetation is removed completely would be the primary impact. Following is the acreage displaced by each alternative as a result of access roads.

<u>Alternative Route</u>	<u>Acreage Displaced</u>
A	40.3
B	57.5
C	42.9
D	74.5
E	81.1
F	80.8
G	82.8

The maximum affect alternative is Alternative G. Even with this alternative, however, the effects on the forest range output goals would be no greater than .02 percent. Part of this affect would most likely be offset by additional forage produced in areas cleared for the power line. The impact to Forest Plan range goals and objectives is not significant.

2. Recreation - Portions of the Lower San Francisco WSA is located within the corridor for Routes E, F and G. Forest recreation sites within the study corridors include the Cottonwood Campground and Pueblo Park. The Aldo Leopold Historic Monument Scenic Vista south of Glenwood on U.S. Highway 180 is also located within study corridor Routes E, F and G.

Fourteen percent of Route A crosses Gila administered Forest land. This alternative route borders 4.4 miles of semi-primitive area (Link 1b). Continental Divide National Scenic Trail (CDNST) routes are crossed along Links 1b, 2a and 37.

Route B is comprised of 25 percent Gila administered National Forest land. In addition to the semi-primitive area bordered by Route A, Route B crosses a semi-primitive area along Link 18 for 0.3 mile. Proposed CDNST routes are crossed six times (Links 1b, 2a, 2b, 16, 32 and 37).

Fifteen percent of Route C crosses Gila administered National Forest land, while 26 percent of Route D crosses Forest land. Neither Route C or D crosses or parallels a semi-primitive area on the Forest. There are five crossings of CDNST alternative routes along Route D.

Approximately 35 percent of the Route E corridor is on National Forest System lands. Nearly 74 percent of this portion is on Forest Service land

administered by the Gila National Forest. The remaining 26 percent is in the Apache-Sitgreaves National Forest in Arizona. The route passes through 0.3 mile of semi-primitive area near the Arizona border (Link 46). Also, one CDNST alternative route (Link 49) crosses Route E corridor.

Thirty-three percent of Route F crosses National Forest System lands administered by the Gila National Forest. Similar to Route E, Route F also crosses 0.3 mile of semi-primitive area and crosses one alternative proposed CDNST route.

Route G is comprised of 37 percent National Forest System lands administered by the Gila National Forest. The impact on semi-primitive area and alternative CDNST routes would be identical to Routes E and F.

The impact to Forest Plan recreation goals and objectives is not significant.

3. Timber - Minor effects to short- and long-term timber yields could occur as a result of timber removal for the transmission line right-of-way and access roads. Clearing the necessary timber to allow conductor clearance and "blow-out" in the 100-foot right-of-way would represent the most significant affect.

Route B (Link 2b for 0.3 mile); Routes E, F and G (Links 5 and 38 for 6.9 miles); and Routes C and D (Links 3b and 3d for 1.2 miles) would affect timber programs on Forest Service lands. Route A (Link 2a for 4.6 miles) crosses lands classified as tentatively suitable for timber production, but would not affect the projected goals of the current timber program. No significant economic effect or significantly affected projected goals and outputs identified in the Forest Plan are anticipated. The estimated long- and short-term affects are displayed as follows.

<u>Route</u>	<u>Link</u>	<u>Long-Term Effect on Yield (Av. Annual MCF)</u>	<u>Short-Term Yield From Clearing (MBF)</u>
B	2b	2.9	387
C,D	3b,3d	0.6	83
E,F,G	5,38	4.7	637

The impact to Forest Plan timber goals and objectives is not significant.

4. Wildlife and Fish Habitat - Types of wildlife impacts that could potentially occur include:

- Effects on federally listed Threatened and Endangered species or critical habitats.
- Effects on state listed protected, threatened, unique or otherwise sensitive species or habitat thereof.
- Creation of barriers to the migration or movement of wildlife species.

- Alteration of the diversity of biotic communities or population number of plant or animal species.
- Effect on important or highly productive habitat or wildlife species of sport, spectator, commercial or educational value.

Initial impacts to Route A corridor resulting from construction would be moderate to low. Major factors include existing access levels, vegetation sensitivity, and the potential presence of sensitive species. Most of the resulting impact would occur off National Forest Land. Mitigation measures would lower residual impact to a low-to-moderate level.

Route B impact would be very similar to Route A. Again, impact levels accrue as a result of vegetation sensitivity, variable existing access levels, and potential impact to several sensitive species. Mitigation could reduce the impact to a low-to-moderate level.

Route C impacts would generally be moderate to low, depending on access levels and potential presence of sensitive species. Most of the impact would occur on sections of the corridor outside of the National Forest land. Route D, from a Forest Service perspective, would also be moderate to low. With the application of mitigation measures, impact along this route could be reduced to low.

The most significant impact to the Forest Service of the eastern routes would occur in the tentatively suitable timber areas. The project would create openings, increased edge, and may affect some old growth timber. These modifications, if executed properly, could result in an overall benefit to wildlife habitat.

Of the three western routes, from a biological perspective, Route E results in the least impact. Initial impact levels would be moderate to low. The greatest potential for impacts are associated with crossings of the Gila and San Francisco rivers where riparian habitat occurs. Conflicts would be significantly reduced if placement of structures and access roads were avoided in the riparian habitat. Some long-term impact could remain at river crossings where line crossings are not made at right angles to riparian habitat and where vegetation development is the least.

Initial impact potentials on Route F are low on the upper end of the corridor but increase to moderate and high on the remaining links (i.e., major riparian crossings). Numerous sensitive wildlife species and access levels contribute to this impact level. Most of the moderate impacts and high impacts could be reduced through mitigation; however, some moderate impacts would remain. Potential impact to federally listed and candidate species of wildlife (i.e., peregrine falcon, bald eagle, loachminnow, spikedace, Gila chub, and Gila roundtail chub occupy this area.

Route G is very similar to Route F with respect to initial impact, except Route G tends more toward the moderate and high range. Impact levels could

be reduced to low-to-moderate with proper mitigation. The same group of federally listed and candidate wildlife species potentially affected on Route F would be affected on the route, along with a significant number of state-listed species. This is the least desirable alternative for wildlife.

The impact to Forest Plan wildlife goals and objectives is not significant.

5. Riparian - Riparian woodlands traversed by all alternative routes are composed of broadleaf trees occurring along the major perennial streams on the Forest. This consists primarily along the San Francisco and Gila rivers and their major tributaries.

The western three routes pose the most significant potential impacts to riparian areas associated with crossings of the Gila and San Francisco rivers. By avoiding construction or placement of structures and access roads within riparian areas where possible, potential degradation can be greatly reduced. Some long-term residual impact may remain at the river crossings from potential avian collision hazard, but if lines are constructed at right angles to riparian areas and cross such habitats where vegetation development is least, this hazard can be greatly reduced.

Significant riparian crossings occur on all alternative routes as follows:

Route A - 3 crossings	Route E - 7 crossings
Route B - 3 crossings	Route F - 7 crossings
Route C - 2 crossings	Route G - 7 crossings
Route D - 2 crossings	

The impact to Forest Plan riparian goals and objectives is not significant.

6. Visual - All routes have some effect on existing Visual Quality Objectives (VQO) as identified and set forth in the Forest Plan. The VQOs of primary concern, in route selection, center on Retention and Partial Retention. The Modification and Maximum Modification Objectives are, by definition, capable of absorbing the potential impacts with standard mitigation measures. The VQO of Retention and Partial Retention, with the route alternatives and effects, appear as follows:

VISUAL QUALITY OBJECTIVES AND ROUTES (in miles/acres)

<u>Route</u>	<u>Retention</u>	<u>Partial Retention</u>
A	2.6/31.5	16.1/195.2
B	5.0/60.6	28.4/344.2
C	1.1/13.3	14.0/169.7
D	3.0/36.4	24.2/293.3
E	12.7/154	32.1/389.1
F	12.9/156.4	37.4/453.3
G	12.9/156/4	37.4/453.3

All of the VQO acreage is within the prescribed allowable changes as identified in the Forest Plan. The Plan allows for a plus or minus two percent change in the foreground for Retention and a plus or minus five percent change in the foreground for Partial Retention. Routes F and G, having the greatest individual and combined impacts, would represent a 0.3 percent change in Retention and a 0.07 percent change in Partial Retention.

The effects on the Forest Plan visual resources goals and objectives are not significant.

7. Cultural Resources - Because specific tower and access road locations are yet to be determined, impacts and applicable mitigation measures cannot be site-specific. Such assessments and mitigation requirements will be completed later to meet the USFS responsibilities under Section 106 of the National Historic Preservation Act. As a result, the following impact assessment is area specific.

Significant sites could occur anywhere along the proposed alternative routes, and it is likely at least some impact to archaeological resources can be expected. However, impacts will be mitigated following procedures as defined by 36 CFR 800. The following is a general display of the areas where high site densities can be expected.

- Route B Link 16 - One area on the northwest margin of the Plains of San Agustin.
- Route C Link 8d - Two areas in the Apache National Forest (administered by the Gila National Forest) south of the Gallo Mountains.
- Route D Link 8d - Two areas in the Apache National Forest (administered by the Gila National Forest) south of the Gallo Mountains;
Link 16 - One area on the northwest margin of the Plains of San Agustin.
- Route E Link 38 - One area along the San Francisco River east of Luna;
Link 46 - One area on the San Francisco River north of State Route 78.
- Route F Link 38 - One area along the San Francisco River east of Luna;
Link 45 - Two areas adjacent to the San Francisco River north of the junction of State Route 79 and US 180.
- Route G Link 38 - One area along the San Francisco River east of Luna;
Link 45 - Two areas adjacent to the San Francisco River north of the junction of State Route 78 and US 180.

The effects on the Forest Plan cultural resources goals and objectives are not significant.

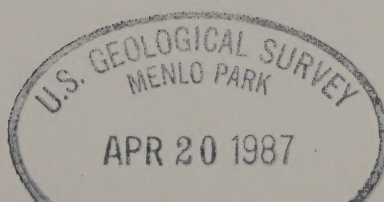
8. Fire Control - The Gila National Forest experienced approximately 400 fires per year during the 1970s. Over 94 percent of these fires were caused by lightning, the remainder were primarily caused by people. More than 70 percent of these fires burned less than one-quarter acre. Fire hazard was highest between the beginning of May and the end of September when 96 percent of the fires occurred. The Gila National Forest's fire experience during the 1970s is believed to be representative of the total project area. Fires on BLM, state and private lands are generally to rangeland, and are less predominant than those on USFS lands. Rangeland recovers more quickly and is less likely to be ignited by lightning strikes.

Impacts to fire control resulting from transmission line construction activities will be short term. There will be full compliance with applicable fire laws and regulations. EPE will establish a project fire plan, approved by appropriate agencies, and all project personnel will be instructed of their responsibilities under the plan. In areas where fire hazards exist, all vehicles and gasoline-powered equipment will have spark arresters. All welding operations and smoking privileges will be restricted to specifically designated areas. In addition, EPE will prevent and suppress fires on or near the right-of-way, including making available construction or maintenance personnel for the suppression of fires.

Construction of utility roads may increase human activity in previously inaccessible areas, thereby increasing the risk for person-caused fires. Also, there is the potential hazard of the transmission line to fire-fighting crews and planes carrying fire retardant. These potential impacts to fire control will be offset by the utility access roads which could provide faster initial attack on a fire. The access roads will also act as a firebreak and impede the spread of a fire.

Transmission line construction may indirectly cause a slight increase in fires as a result of improved access. These possible increases in fires will be offset by fire breaks and improved access. Under all alternatives considered the impacts will be low or none.

9. Water Courses and Riparian - Water courses and riparian areas were considered to be among the most sensitive features in any of the alternative corridors. Specifically, during the initial siting of the proposed project no water courses or riparian streams were paralleled. Chapter 4 of the Draft PA/EIS, and under the discussion of issues in this chapter, identified the numbers of riparian crossings on each alternative route and incorporated those numbers into the route selection process. Route C was chosen as the preferred alternative in part because it involved only two significant riparian crossings and did not involve any crossings on the Gila or San Francisco rivers or their major tributaries. Route G was the least desirable alternative for biological resources because of seven major riparian crossings on the Gila, San Francisco and Mimbres rivers. Moreover, mitigation recommendations for all riparian crossings included completely spanning the system, no construction of access roads in riparian woodlands, and no placement of any construction or operation facilities within such woodlands. Avoiding any construction activity



in riparian woodlands would essentially preclude negative impact with the possible exception of some long-term, low-level collision hazard for large birds (e.g., raptors, herons, ducks) that would persist by crossing riparian woodlands and water courses. Riparian woodlands and water courses are discussed in greater detail in the technical report on biotic resources.

10. Road Management Planning - A description of the intent of construction and access road development is described on page 3-8 of the Draft PA/EIS. Road management planning will dictate access for construction. Detail road design will be completed following surveying and staking of the line in the field. Road designs will conform with planning standards of both federal agencies, as well as individual private landowners, prior to issuance of the easement to construct the line. The federal agencies will define the limits of construction rehabilitation based upon transportation and road management objectives. In some cases, roads will have locked gates, be blocked, or be completely obliterated, depending upon the management policy for an increase of roaded access into a specific area.

Identification of Preferred Alternatives

Based upon a review of impact characterization, significant unavoidable adverse impacts, individual resource routing preferences, and agency/public comments, the cumulative environmental consequences of each alternative were summarized. Least potential impact or environmentally preferred alternatives were identified based upon a review of these data in relation to priorities of values.

No Action Alternative

The no-action alternative means that no new transmission facilities would be constructed between the Red Hill area and the Luna Substation near Deming, and that no environmental consequences would result. EPE would not, however, be able to meet the objectives stated in the Draft PA/EIS Chapter I, Purpose and Need, and would be unable to meet its primary objective of oil and gas displacement. The following is a discussion of the pros and cons to the no-action alternative.

Advantages of the no-action alternative would include (1) no adverse environmental impacts within the project study area itself, and (2) elimination of financial costs associated with construction and operation of a 345kV transmission line. However, any monetary savings could be offset by costs of other actions EPE would need to take. The disadvantages of the no-action alternative include the loss of potential project tax revenues to local tax districts in addition to adverse environmental, socioeconomic, and electric service impacts that would result due to other mitigating actions taken to ensure an adequate and affordable energy supply to EPE.

In an effort to meet forecast need without new transmission facilities, EPE would be forced to continue and would likely increase baseload generation from existing oil- and gas-fired units, thereby maintaining oil and gas consumption at or above present levels. Gas and oil used to generate this power have historically been much more expensive than fuel producing power at the Springerville source (coal). Not only have oil and gas been more expensive as fuel sources than coal for baseload generation, but the use of oil and gas as primary fuels by utilities is discouraged by federal energy policy, as outlined in the PIFUA of 1978. Additionally, supplies of oil are uncertain. EPE's fuel costs have increased 500 percent in the past 10 years, which has been a dominant force behind the increased cost of electricity to consumers.

The no-action alternative would create a need to increase power transport and purchases over interruptible transmission capacity available to EPE on existing systems of other utilities. Only limited quantities of interruptible transmission capacity are available, and future amounts are expected to be substantially less than those required to fully mitigate the projected shortfall in electrical supply. Further, because this type of power transfer can be interrupted at any time, EPE could not rely on interruptible transmission capacity for system planning.

The no-action alternative would also affect EPE's reserve margin. EPE maintains a reserve margin consistent with its interconnected neighbors and its commitments to the New Mexico Power Pool and the Inland Power Pool. This reserve margin is available to EPE or to any interconnected neighbor in the event of a major line or generating unit outage. Also, the reserve margins are necessary for regular maintenance of local and remote generating units owned by EPE or its joint partners.

The intended effect of adding new transmission is to spread out, among more lines, the concentration of power flows thereby reducing the largest single hazard required to be recovered by a reserve margin. The no-action alternative would tend to increase the loading on existing lines and likely increase the largest single hazard requiring more local generation to be on-line in reserve for an outage.

Some significant disadvantages or adverse impacts would result from the shortage of transmission capacity, if the no action alternative is selected. EPE would not be able to access the remote coal and nuclear fueled generation it owns and would be precluded from participation in the economy energy spot market that is available. This inability to reduce oil and gas consumption could seriously effect EPE's ability to provide electrical power in its service territory if oil and gas availability were to be interrupted.

Service might have to be interrupted more frequently for maintenance and emergency outages, and a moratorium on new electric service hook-ups might become necessary. Such a situation would adversely affect residential, commercial and industrial customers in terms of income, health, safety and general convenience.

In summary, because the no-action alternative does not meet the stated purpose of the project objectives, it has been eliminated from consideration as the preferred alternative.

Environmentally Preferred Alternative

Because the no-action alternative does not meet the project's purpose and need, only routing alternatives are considered here. Of the two major routing alternatives, the western environmentally preferred alternative is Route E, and the eastern environmentally preferred alternatives are Routes C and D because there are no environmental data distinguishing a preference. Refer to Table I-1 in Chapter I.

Agency Proposed Alternative

Because the no-action alternative does not serve the objectives of this project, it has been eliminated from consideration as the agency proposed alternative. The BLM/USFS combined agency proposed alternative is Route D.

Given the nearly equal environmental impacts shown for Routes C, D and E, the final decision was based on an analysis of additional factors identified by both agencies and from the comments generated by concerned publics. Public comment showed a strong preference for maximizing the use of federally administered public lands and for avoiding the Plains of San Agustin. Based on public input and the additional criteria listed below, it was appropriate to select Route D as it was similar in many respects to Route C and is more responsive to the above-mentioned concerns.

In addition to the public's concerns, the following criteria were also used to assist the agencies in arriving at a proposed alternative.

Rehabilitation - The ability to respond to surface disturbance with a high potential for success in achieving revegetation and stabilization.

Successful rehabilitation is dependent on factors including, but not limited to, steepness of terrain, aspect, moisture regimes, and vegetative/soil composition. This represents an expansion of the decision criterion presented in the PA/DEIS.

Routes E and D possess considerable amounts of steep terrain. Route E represents the greatest rehabilitation risk primarily due to characteristics encountered during the crossing of National Forest System lands along the New Mexico-Arizona state boundary area. Routes D and C are similar in terms of potential rehabilitation success with a favorable advantage to Route C due to gentler terrain through the Plains of San Agustin.

Given similar rehabilitation factors, Route D was selected as the proposed route because it avoids impacting the Plains of San Agustin and crosses more

public lands, which were concerns expressed by many citizens through public meetings and written responses.

Expansion - The capability for adding transmission or other linear utility lines within an existing or potential corridor.

Currently, the existing TEP corridor consists of a single circuit 345kV and a double circuit 345kV structure (only on the portions of National Forest System lands) with only one circuit installed and one 345kV circuit position reserved for future use by TEP. This corridor is 330 feet wide and is fully occupied.

Route E would necessitate the creation of a new corridor roughly parallel to the existing TEP corridor but separated at various locations (up to approximately two miles) because of topographic and land status constraints. Therefore, additional expansion capability is restricted within the lands administered by the Forest Service. Routes D and C would also require the creation of new corridors. Route C offers slightly better expansion capabilities than Route D due to the narrow "window" Route D must negotiate through roadless areas at Silver Creek at the north end of the Black Range.

Future expansion capabilities of any given corridor alternative is a legitimate concern of federal land managers. Anticipated future additions are appropriate and logical in arriving at decisions effecting resources on a long-term basis. Route D is the proposed route and was selected over Route E for reasons stated above. Although Route C provides for excellent expansion capability, Route D was selected as the proposed alternative in response to public comments regarding crossing the Plains of San Agustin and crosses more public lands.

System Reliability - Risk or system failure due to natural and/or man-caused occurrences.

The characteristics of terrain, weather, vegetation, and the physical composition of the transmission line itself are factors which effect system reliability.

Route E represents the least reliable system because of terrain limitations along the upper one-third of the line. Heavy snow loads, narrow routing opportunities and passing through heavily forested areas are also contributing factors. In addition, the physical presence of the existing TEP line would require crossings of those lines in at least two locations. This is a constraint brought about by existing Wilderness and Wilderness Study Areas.

Routes D and C are about equal regarding risk with a slight advantage going to Route C due to passing through less rugged terrain on the northern portion of the Black Range. Route D was selected as the proposed route because it is well within the industries acceptable risk standards, avoids encroaching on the Plains of San Agustin and crosses more public lands.

Cost - The estimated construction cost as submitted by EPE (does not include right-of-way acquisition costs).

Cost, to a great degree, is a reflection of engineering requirements due to terrain limitations and the mitigation required to minimize environmental impacts. Since costs are ultimately passed on to the consumer, land managers are concerned when a large disparity exists in these costs when environmental impacts between alternatives are nearly equal.

Routes E, C and D have been identified as environmentally preferred alternatives. However, because of dramatic cost differences and given near equal environmental impacts, the BLM and USFS used cost to assist in arriving at the proposed route.

Route E represents a cost in excess of approximately \$10 million over the next highest route, Route D. Route C is the least expensive at approximately \$1 million below Route D. As land management agencies, the BLM and USFS cannot justify passing on to consumers the additional \$10 million cost for Route E. Route D was selected as the proposed alternative because it is reasonable in cost and responds to other concerns raised through public input.

EPE Preferred Alternative

In addition to the environmental issues presented in this document, EPE evaluated the electrical performance, engineering difficulty, system reliability, anticipated construction schedule, and project cost of each of the seven alternative routes.

Route C is the company-preferred route. However, EPE's evaluation of the agency preferred Route D shows it to be acceptable.

CHAPTER 3 - PUBLIC PARTICIPATION AND COORDINATION

This chapter summarizes the activities and coordination conducted in preparation of the Draft and Final Environmental Impact Statement (EIS) for the Grand Canyon-Parashant National Monument. In the course of preparing the document, various steps were taken to involve the public, other Federal agencies, and State and local governments in planning and environmental protection. Public participation was required by regulation and was completed early in the project. Other steps were taken to further involve the public.

The public participation and coordination process began with publication of a Notice of Intent to prepare a EIS in the Federal Register, Volume 1, No. 73, April 14, 1976, pages 17731-17734. The Notice stated that the project would be completed through a "third-party" agreement under the authority of the Las Cruces District Office of the BLM. In addition, the USFS would be a cooperating agency. The project would serve to extend the Grand Canyon in addition to BLM plans.

The object of the EIS and the supporting studies was to allow an informed decision to be made on the basis of a transparent plan. The first phase of the studies was a scoping study to determine requirements and opportunities in selection of an alternative management plan. During the scoping study, various groups and organizations were contacted, as well as the landowners, community leaders, and special interest groups.

A fact sheet describing the project was sent to the entire mailing list, and the notice of public scoping meetings. The mailing list included all those individuals, groups, and organizations on the previous BLM mailing list, the BLM and USFS Management Plans mailing lists, landowners, and those associated with the WSA projects, adjacent state lands, and landowners. A list of recent recent contacts, as well as additional notices, was included in the mailing list. News releases announcing the scoping meetings were sent to all newspapers. Public service announcements were sent to radio stations.

The six scoping meetings were held as follows:

- May 4, 1976 - Socorro, New Mexico
- May 7, 1976 - Truth or Consequences, New Mexico
- May 8, 1976 - Gallup, New Mexico
- May 12, 1976 - Clifton, Arizona
- May 14, 1976 - Springerville, Arizona
- May 15, 1976 - Roswell, New Mexico

Seventy-three people attended the scoping meetings. During July 1976, a second newsletter was sent to the entire mailing list. The letter stated of the completion of the scoping study, the selection of the management alternatives, the concerns of the public, and the progress of the environmental study process.

CHAPTER 3 - PUBLIC PARTICIPATION AND COORDINATION

This chapter summarizes the consultation and coordination conducted in preparation of the draft and final Plan Amendment/Environmental Impact Statement (PA/EIS) for the Arizona Interconnection Project. In the course of preparing the document, formal and informal efforts were made to involve the public, other federal agencies, and state and local governments in the planning and environmental process. Several points of public involvement are mandated by regulation and were complied with, but numerous other actions were taken to further involve the public.

The public participation and coordination process began with publication of a Notice of Intent to prepare a PA/EIS in the Federal Register (Volume 51, No. 73, April 16, 1986, pages 12933-12934). The Notice stated that the project would be completed through a "third-party" agreement under the direction of the Las Cruces District Office of the BLM. In addition, the USFS would be a cooperating agency. The process would serve to amend the Forest Plans, in addition to BLM plans.

The object of the PA/EIS and the supporting studies was to allow an informed decision to be made on the siting of a transmission line. The first phase of the studies was a regional analysis to determine constraints and/or opportunities in selection of alternative transmission line corridors. During the regional analysis, key agencies and organizations were contacted, as well as key landowners, community leaders, and special interest groups.

A fact sheet describing the project was sent to the entire mailing list, as was the notice of public scoping meetings. The mailing list consists of those individuals, agencies and organizations on the previous EIS mailing list, the BLM and USFS Management Plans mailing lists, known contacts associated with the WSA projects, additional state lists, and landowners. As a result of recent record searches, we have added additional landowners to the mailing list. News releases announcing the scoping meetings were sent to 15 newspapers. Public service announcements were sent to nine radio stations.

The six scoping meetings were held as follows:

- May 6, 1986 - Socorro, New Mexico
- May 7, 1986 - Truth or Consequences, New Mexico
- May 8, 1986 - Deming, New Mexico
- May 13, 1986 - Clifton, Arizona
- May 14, 1986 - Springerville, Arizona
- May 15, 1986 - Reserve, New Mexico

Seventy-three people attended the scoping meetings. During July 1986, a second newsletter was sent to the entire mailing list. The letter advised of the completion of the regional study, the selection of the final study alternatives, the concerns raised at the public scoping meetings, schedule for the environmental study process, and public participation opportunities.

During early September 1986, news releases (21) were sent out and notices (1,000) of public workshops were mailed. The public workshops were held in Reserve, Socorro, Truth or Consequences, and Deming, New Mexico, September 22-25, 1986. The workshops had four purposes: (1) to provide background on the project and review its purpose and need; (2) to report the results of the regional environmental studies; (3) to present the preliminary preferred environmental alternatives; and (4) to gain public input on the acceptability of these alternatives. Approximately 60 members of the public attended these workshops. The Draft PA/EIS (approximately 700 copies) was released to the public and agencies during November 1986 for review and comment. In addition to the Federal Register Notice, news releases and a newsletter were sent out announcing the release of the Draft PA/EIS, and the public hearing dates and locations.

Property owners along the agency preferred Route C whose lands were identified by BLM as potentially being crossed by the transmission line were sent copies of the newsletter. This afforded them the opportunity to attend the public hearings and/or request a copy of the DEIS. It is acknowledged that the list developed was not inclusive of all property owners.

Public hearings were held as follows:

- January 13, 1986 - Reserve, New Mexico
- January 14, 1986 - Truth or Consequences, New Mexico
- January 15, 1986 - Deming, New Mexico
- February 10, 1986 - Silver City, New Mexico

Approximately 150 people attended the public hearings, but only 17 presented testimony. In addition, 48 letters were received commenting on the Draft PA/EIS during the review period.

Substantive comments on the Draft PA/EIS from the public hearings and comment letters were responded to. All letters are reprinted in Chapter 4 of this document. Portions of the hearing transcripts containing substantive comments are also reprinted. Complete hearing transcripts are available for public review at the Las Cruces District office of the BLM and at the Supervisor's office, Gila National Forest, Silver City, New Mexico.

A copy of the Final PA/EIS has been sent to those agencies, organizations and individuals listed in Table 3-1.

TABLE 3-1
LIST OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS
RECEIVING FINAL PA/EIS

FEDERAL

Advisory Council on Historic Preservation
U.S. Department of Agriculture
 Forest Service
 Region 3 Regional Office
 Gila National Forest
 Black Range Ranger District
 Luna Ranger District
 Glenwood Ranger District
 Reserve Ranger District
 Quemado Ranger District
 Cibola National Forest
 Apache-Sitgreaves National Forest
 Soil Conservation Service
Department of Energy
Department of Interior

Bureau of Land Management
 Environmental Project Office
 Natural Resources Library
 Office of Public Affairs
 BLM Planning Office - Washington
 New Mexico State Office
 Las Cruces District
 Socorro Resource Area
Fish and Wildlife Service
National Park Service
Environmental Protection Agency
 EPA Washington
 EPA Dallas
 EPA San Francisco
Federal Highway Administration

STATE

New Mexico Governor's Office
Arizona Department of Commerce
Arizona Game and Fish Department
Arizona Governor's Office
Arizona State Clearinghouse
New Mexico State Clearinghouse
New Mexico:
 Department of Agriculture
 Department of Energy and Minerals
 Department of Finance and
 Administration
 Department of Game and Fish
 Department of Natural Resources

State Library
Historic Preservation Bureau,
 State Historic Preservation Officer
Public Service Commission
State Highway Department
State Parks and Recreation
State Land Office
Environmental Improvement Division
Attorney General's Office
Economic Development and Tourism
Department of Transportation

LOCAL

Grant County Commission
Apache County Commission
Catron County Commission
Luna County Commission
Sierra County Commission
Socorro County Commission
Mayor, City of Truth or Consequences

Mayor, City of Deming
Mayor, City of Springerville
Mayor, Town of Socorro
Mayor, Village of Magdalena
Mayor, Village of Reserve
Mayor, City of Silver City

Table 3-1 (continued)
Individuals and Organizations

SENATORS AND REPRESENTATIVES

Representatives: Alamagordo, Silver City, Socorro
Senators: Deming, Grants, Silver City, Socorro

INDIVIDUALS AND ORGANIZATIONS

William A. Anderson
Leandro Aragon
Linda Ardakani
A. Spear Ranch (Dan Datolla)
Herman Baca
Narciso Baca
Beck Land & Cattle Company (Allan Beck)
C. David Bedford
Rulon Bigelow
H.B. Birmingham, Jr.
Judy Bishop
James Blair
Blekieki
Elfren Bocanegra
Terry Boone
Ron Borkan
Thomas D. Brasfield
Mark Brosseau
John Brownfield (Goodsight)
Patrick Browning
Richard & Susan Bundy
Richard A. Burns
William J. & Susan Ceppi Bussman
Doug Campbell
Joseph Canepa
Bill Carlis
Billy T. Carrejo
Enos Chapman
Forrest Chastain
Harvey Chatfield
Jack & Leona Chatfield
Lorenzo Chavez
E.A. Chavez
John M. Chittick
Michael J. Chittick
Raymond F. Christler
Janice Cimaglia

Jane Clifford
CL Crowder Investment Co.
Coil Family Partnership
Copper Flat Partnership
Tip Cowan
Jay Cox
J.M. Crain
Patrick Crane
Cuchillo Enterprises
(April and David Romero)
Mack W. & Kay L. Dalton
Pat Danser
R.L. & Claudine Davis
Kathleen De Floria
Marshall B. Doolittle
Nell Doyle
El Paso Natural Gas Company
George & Flor Elkins, Jr.
Ann Embury
Farr Cattle Co. (Dave Farr)
Carl Faubion
Governor Chester T. Fernando
Ralph A. Fisher, Jr.
John A. Flammang
Diane Flock
Richard Foster
Dr. John Fowler
Randolph Franks
Franzoy Cattle Company (Fred Franzoy)
Suzanne Freeman
Russell Freeman
Dan Garrett
Darlene Garrett
Kerry Garrett
Fred D. George
Gila Land & Cattle Co.
Peter Glaberman

Table 3-1 (continued)
Individuals and Organizations

Elanor H. Good
Donald Graham
Walter & Jocelyn Greeman
Raymond Greer
Edgar E. Greer
G.S. Greer (Calhoun Community)
M. and Marjorie Hall
Len Hancock
Joanne Hardesty
Harlosa Cattle Company
John Henry Hedger
Hemley Corporation
Dale Henderson
Clay Henderson
Charles Hendrickson
George Herman
Virginia K. Hillis
Allen Hockinson
Robert & Mary Hooper
Bill Hopkins
Dale & Sara Hopkins
James & Jean Humphrey
James Hurt
Mrs. N.T. Hutchison
Birdie & Gaya Irwin
Jim Jackson
Kevin James
Jose A. Jaramillo
W.E. Johnson
William and Mary Johnson
Thomas & Nance Jones
Thomas P. Joyce
W.A. Allen, Jr.
R.W. & Judith Kartchner
Wilford Kelly
Kennedy/Hall
Emil Kiehne & Sons
Aurora & Justinia Kline
Michael & Judith Krantz
Donald A. Krider
Paul Krehbiel
Richard Krol
Ed R. & Victoria Krol
Wally Kubina

Edwald J. Kubina
James & Bernice Langner
Chester Law
Sato Lee
Robert & Irene Lee
Oliver M. & Kathy Lee, III
Oliver Lee, Jr.
Jay J. Lett
Gerald Lyda (Ladder Ranch)
Minnie Lou Lynch
Gene Lyon
John MacAyeul
Matti Nunn
Anthony Magdalena
C.A. Marchese
Steve Marlatt
Gwynevere Marrs
Herbie Marsden
Wanda Lou Martin
R.W. Mason
Edith A. Matlack
Ross and Anita May
Bryon R. May
Joseph & Mary McCracken
Robert Y. McMillian
Henry Meadow
Mary Meadow
Richard Meadow
Patricia Meadow
Mr. & Mrs. Tom Merlan
Bob & Phyllis Montgomery
Monticello Group
Alerico R. Montoya
Carver Yates Moore
Ed Morgan
National Radio Astronomy Observatory
Euel & Ruby Nave
M. Edward Nesselroad
Bernice Newmark
Edwin Nichols (El Paso Natural Gas Co.)
Lois C. Norman
Smokey Nunn
Joe Bill Nunn
Florerio Orona

Table 3-1 (continued)
Individuals and Organizations

Charles Orona
Neil T. Parrish
J. Patterson (Rancho Alegre)
Roger S. Peterson
Wayne Pitman
Carl Popp
POWER Engineers
Rick Precek
June Price
Cristina Rael
R.L. Rains
Kenneth Ralston
Robert Richardson
S.O. Roberts
Jack & Mary Roberts
Billy G. & Pat Robinson
Joe & Edna M. Ruiz
Estill & Carlie Russell
Bruce Sage
Helen N. Salas
Michael Sauber
Fred C. Schmidt
Antonia Sebastian
Charlie Sedillo
David Sheegog
James & Carroll Shelton
Richard & Edna Showalter
Sierra Club
W.R. Skousen
SKS Enterprises, Inc.
Les Smith
Patrick Smith
Teri Smith-Eskey
Donald Spears
Stan Specht
Gerry D. Spitzer
Ione H. Sprecher
Robert G. Stepp
Nancy Stockdale
Jim Streicher
Kenneth & C. Sullivan
Charles M. Sullivan
Tim Summers

Nellie Summers
Dave Swanson
Salomon Tafoya
Ciriaco G. Tafoya
Adam Torres
Kenneth Treadwell
Triple T. Ranch
Gena Trott
Chris Trujillo
Jay Tucker
John C. Tucker
Arthur L. Tuttle, Jr.
Jose A. Vargas
Kevin Von Finger
Robert & Mary Lou Waite
Richard W. Wanek
Albert F. Ward
Herbert W. Warren
James & Bader Wells
Gail Whitcomb
Marvin Wilkening
Jim Williams
Gary Williams
Fred Yost
Shirley Young
Mary Youse
Charles Zumwalt

Table 3-1 (continued)
Individuals and Organizations

LIBRARIES

Tucson Public Library	Albuquerque Public Library
Las Cruces Public Library	Deming Public Library
Socorro Public Library	Truth or Consequences Public Library
Silver City Public Library	Santa Fe Public Library
El Paso Public Library	Reserve School Library
Alamogordo Public Library	
National Depository Library Program	

INDEX OF THOSE RESPONDING TO THE
DRAFT PA/EIS BY LETTER

<u>Reference</u>	<u>Source</u>	<u>Location</u>
1	National Radio Astronomy Observatory	Socorro, New Mexico
2	Doraine Gerritt	Winston, New Mexico
3	Blakely	Magdalena, New Mexico
4	Arizona Game and Fish Department	Phoenix, Arizona
5	Marvin Wilkening	Socorro, New Mexico
6	Kerry Gerritt	Winston, New Mexico
7	Gene Lyda	Coballo, New Mexico
8	Edwin Nichols El Paso Natural Gas Company	El Paso, Texas
9	R.A. Burns	Coballo, New Mexico
10	Arizona Department of Commerce	Phoenix, Arizona
11	Gwendolyn Morris	Winston, New Mexico
12	Neil Doyle	Winston, New Mexico
13	Don Gerritt	Winston, New Mexico
14	Salomon Tatro	Albuquerque, New Mexico
15	Suzanne Freeman	Austin, Texas
16	USFS, Region 3	Albuquerque, New Mexico
17	Oliver Lee, Jr.	Dora, New Mexico
18	Richard Mendon	Canton, Massachusetts
19	Joanne Hardesty	Las Cruces, New Mexico

CHAPTER 4
COMMENTS AND RESPONSES TO THE DRAFT PA/EIS

INDEX OF THOSE RESPONDING TO THE
DRAFT PA/EIS BY LETTER

<u>Reference</u>	<u>Source</u>	<u>Location</u>
1	National Radio Astronomy Observatory	Socorro, New Mexico
2	Darlene Garrett	Winston, New Mexico
3	Blekieki	Magdalena, New Mexico
4	Arizona Game and Fish Department	Phoenix, Arizona
5	Marvin Wilkening	Socorro, New Mexico
6	Kerry Garrett	Winston, New Mexico
7	Gene Lyda	Caballo, New Mexico
8	Edwin Nichols El Paso Natural Gas Company	El Paso, Texas
9	R.A. Burns	Caballo, New Mexico
10	Arizona Department of Commerce	Phoenix, Arizona
11	Gwynevere Marrs	Winston, New Mexico
12	Nell Doyle	Winston, New Mexico
13	Dan Garrett	Winston, New Mexico
14	Solomon Tafoya	Albuquerque, New Mexico
15	Suzanne Freeman	Austin, Texas
16	USFS, Region 3	Albuquerque, New Mexico
17	Oliver Lee, Jr.	Datil, New Mexico
18	Richard Meadow	Canton, Massachusetts
19	Joanne Hardesty	Las Cruces, New Mexico

20	Mary Meadow	Winston, New Mexico
21	Richard Krol	Deming, New Mexico
22	David Farr Farr Cattle Company	Datil, New Mexico
23	Thomas Merlan	Datil, New Mexico
24	James Jones Sierra Club	Socorro, New Mexico
25	Harlosa Cattle Co.	Dallas, Texas
26	Joe Bill Nunn	Deming, New Mexico
27	Patricia Danser	Deming, New Mexico
28	M. Edward Nesselroad	Deming, New Mexico
29	G.S. Greer	Truth or Consequences, New Mexico
30	Jack Roberts Poverty Creek Ranch	Winston, New Mexico
31	Georgia Hutchison	Truth or Consequences, New Mexico
32	Russell Freeman	Winston, New Mexico
33	Henry Meadow	Winston, New Mexico
34	C. David Bedford	Albuquerque, New Mexico
35	Adam Torrez	Monticello, New Mexico
36	Judy Bishop	Santa Fe, New Mexico
37	EPA	Dallas, Texas
38	Bill Bussman	Caballo, New Mexico
39	Susan Bussman	Caballo, New Mexico
40	Paul Krehbiel	Socorro, New Mexico
41	Monticello Group	Monticello, New Mexico

42	Richard Krol	Deming, New Mexico
43	Eldon G. Reyer National Park Service	Santa Fe, New Mexico
44	Dean Olson Department of Finance and Administration State of New Mexico	Santa Fe, New Mexico
45	Harold Olson Department of Game and Fish State of New Mexico	Santa Fe, New Mexico
46	Anne Cully New Mexico Natural Resources Department	Santa Fe, New Mexico
47	Tom Devlin Energy and Minerals Department State of New Mexico	Santa Fe, New Mexico
48	Nancy Wood Office of Cultural Affairs Historic Preservation Div. State of New Mexico	Santa Fe, New Mexico
49	April L. Romero Ray Romero	Cuchillo, New Mexico
50	Dolores Ortega	Winston, New Mexico
51	John W. Russell U.S. Forest Service Southwestern Region	Albuquerque, New Mexico

LETTER #1 COMMENTS



NATIONAL RADIO ASTRONOMY OBSERVATORY

POST OFFICE BOX 0 SUCORRO, NEW MEXICO 87801-0387
TELEPHONE 505 728 4011 FAX 505 728 1700

26 November 1986

Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Gentlemen:

Thank you for sending us a copy of the draft Plan Amendment/Environmental Impact Statement for the Arizona Interconnection Project.

As noted in Chapter Five on page 5-33 under "Interference to Radio Telescopes," all the routes under study avoid the interference zones of the Very Large Array and the Very Long Baseline Array antenna at Pie Town. Route C may pass within the interference zone of a future VLBA antenna at the nominal "Dusty" location. However, that position has been determined only with a precision of about one mile, and so should not constrain the selection of the final route of the project in that area.

The National Radio Astronomy Observatory recommends that the best route for the project be selected regardless of proximity to the nominal "Dusty" location because we will be able to find another suitable location for that antenna.

Please send me a copy of the Technical Report on the project.

Sincerely yours,

Patrick C. Crane

Patrick C. Crane
Frequency Coordinator

PCC/ppc

RESPONSES

No response necessary.

LETTER #2
COMMENTS

RESPONSES

December 1, 1986

Juan Padilla
Bureau of Land Management
Las Cruces District Office
2800 Marquess Street
Las Cruces, N.M. 88005

Dear Mr. Padilla

- A [It only seems sensible for the Arizona Interconnection Transmission Line to go where there is a existing line.
- B [It seems a sin to disturb the San Augustin Plains with a power line. Why does the Virginland of New Mexico have to be ruined for the City of El Paso?
- C [What do you plan to do about the Paragon Falcons in Havil Canyon?
- D [You draw nice lines on maps showing where Route C is and state the terrain is less steep than Routes D and E. How can you know this when there is no way you can know because the land you propose to tear up is behind locked gates!
- Darlene Sanett

DOUBLE ARROW RANCH . WINSTON, NEW MEXICO 87943

- A The routing alternatives considered in detail parallel existing transmission or power line corridors where it is possible. This was one of the issues brought forth by the public during the scoping meetings and public workshops that were held. Please refer to Chapter 2 of this document for a detailed discussion on paralleling existing transmission lines.
- B Although the western edge of the Plains is crossed and some residual environmental impact will remain (e.g., visual impact), the route is preferred by the BLM and USFS over other routing alternatives. The two federal agencies are charged with both providing for utility corridors and protecting the environment. The need for the proposed action is discussed in Chapters 1 and 3 of the Draft PA/EIS and in Chapter 2 of this document. EPE, as mandated under the Powerplant and Industrial Fuel Use Act of 1978, plans to retire gas and oil generation in the El Paso area. Coal-generated power, generated in several remote locations such as the Springerville Plant, is accessed only with transmission lines. In addition, EPE serves nearly 50,000 customers in New Mexico.
- C The only areas identified by the U.S. Fish and Wildlife Service and the State of New Mexico, Department of Game and Fish that were of concern relative to peregrine falcons occurred on Links 41 to 45 (parts of Routes E, F and G). There were no peregrine falcon areas identified anywhere on Route C. Dr. John P. Hubbard, New Mexico Game and Fish Department, has indicated (personal communication, April 8, 1986) that he feels most peregrine falcon observations in areas traversed by Routes C and D are actually misidentified prairie falcons which are relatively common in west-central New Mexico. The aerial photographic interpretation of the area traversed by Route C in the Winston area is that most of the habitats crossed are juniper-pinyon woodlands and juniper grasslands with no flowing water or large standing bodies of water near major cliff systems. The latter suggests rather strongly that the habitat involved is not ideal nesting habitat for peregrine falcons. Peregrines could occur in the area, however, during migration or in winter. If peregrine falcon nests are discovered in the area, EPE will avoid those habitats and cease construction in the area during nesting periods.
- D The alternatives were studied to the extent possible on public lands using ground vehicles. Private lands and those public lands with limited or no access were flown extensively in fixed-wing aircraft and helicopter. Additionally, recent aerial photography, and available topographic and planimetric maps were used to obtain knowledge of the terrain.

LETTER #3 COMMENTS

Jan 9 1986

HI NE,

THIS LETTER IS IN REFERENCE TO THE ARIZONA INTERCONNECTION
TRANSMISSION LINE.

ALL I CAN SAY IS I DONOT WANT IT BUILT. I DO NOT
WANT TO SEE THE POWER LINE, TOWER COMING ACROSS ANY
PART OF NEW MEXICO.

A [IF EL PASO NEEDS THE ELECTRICITY THEY SHOULD OF BUILT
THE POWER PLANT IN TEXAS.

max
nix,

Reside

RESPONSES

A Alternatives utilizing other generation sources were considered. It was determined in the Arizona Interconnection Project Draft PA/EIS (November 1986) that a new generating plant is not needed until the late 1990s, since existing and planned electrical generating capacity of EPE and other utilities appears adequate, and that the cost of a new generation plant would cause a significant financial impact to EPE customers. Additionally, a new generation plant would set the cost of generating power, thus reducing the flexibility to buy economy power available by adding firm transmission capacity.

LETTER #4 COMMENTS

BRUCE BABBITT, Governor

Commissioners:
W. LINN MONTGOMERY, Flagstaff, Chairman
FRED S. BAKER, Elgin
LARRY D. ADAMS, Bullhead City
FRANCES W. WERNER, Tucson
THOMAS G. WOODS, Jr., Phoenix

Director
DUD HIRSTOW

Assistant Director, Services
ROGER J. GIBBENEWALD

Assistant Director, Operations
DUANE L. SHROUFE



ARIZONA GAME & FISH DEPARTMENT

2222 West Greenway Road Phoenix, Arizona 85023 942-3000

January 13, 1987

Mr. H. James Fox, District Manager Jx
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

RE: Arizona Interconnection Project

Dear Mr. Fox:

The Arizona Game and Fish Department has reviewed the draft Plan Amendment/Environmental Impact Statement (PA/DEIS) for the proposed El Paso Electric 345kV Transmission line, or Arizona Interconnection Project. In general, the PA/DEIS appears to be comprehensive and accurate in its treatment of the six alternatives, and adequately documents the selection of the Proposed Action.

Our interest largely pertains to the only corridor route through Arizona, Route E. This route is identified as the one (of 7) which "would result in the least disruption to environmental resources" (page 3-17). This would be mainly due to the alignment of the transmission line adjacent to an existing corridor. We do not dispute this finding, particularly in light of the fact that this route was not considered the Proposed Action, due to other evaluation parameters.

A However, we feel it is necessary to reiterate some of the information provided to WIRTH Environmental Services in an August 5, 1986 letter. Little, if any of this information appears to have been incorporated into the PA/DEIS. In this letter we did acknowledge that Link 46 falls within an existing corridor and, as such, would certainly result in considerably less impacts than if a new corridor were created. At the same time, however, we did express a strong concern over the potential for increased road access, which could reduce big game habitat effectiveness.

There was minimal, if any, discussion of game species in the PA/DEIS. The northern portion of Link 46 constitutes excellent habitat for mule deer and white-tailed deer, black bear, Merriam's turkey, mountain lion and javelina. The rugged terrain in the general vicinity of the San Francisco River provides

RESPONSES

A We agree that the northern portions of Link 46 in Arizona traverse outstanding game habitat (mule deer, white-tailed deer, black bear, Merriam's turkey, mountain lion, javelina, and, locally, Rocky Mountain bighorn sheep). We also acknowledge that the discussion of these species in the Draft PA/EIS should be expanded (see Chapter 5) and that construction of Route E could have some negative impact to those species and management thereof.

In the regional study effort, habitat of spotted owl and loach minnow was identified and specifically avoided by Alternative Link 46 (as identified by the Apache-Sitgreaves National Forest). The present alignment of Link 46 is located more than one mile to the east of identified "critical habitat" of both spotted owl and loach minnow. The narrow-headed garter snake is discussed in the biological assessment for this project (reprinted in Appendix B), but we acknowledge that greater discussion of the species in Arizona is warranted (see Chapter 5). Since Link 46 avoids most live-stream riparian situations in Arizona, we feel the potential for negative impact to this species is minimal. Should construction take place on Route E (Link 46), specific recommendations have been made to span all riparian situations that no access roads be placed in riparian habitats, and that no other construction facilities be placed in such habitats. This would almost totally preclude negative impact potential to aquatic species (e.g., narrow-headed garter snake and loach minnow).

Records of the western jumping mouse (*Zapus hudsonicus*) in Arizona are generally from grassy areas along streams at elevations in excess of 7,700 feet. Link 46's centerline does not cross habitats at that elevation, therefore is not included in the analysis.

LETTER #4 (CONT.)
COMMENTS

RESPONSES

Mr. H. James Fox

-2-

January 13, 1987

A The PA/DEIS includes considerable treatment of nongame, T&E, and sensitive wildlife species. However, information relative to the documented presence of Arizona State threatened native wildlife species within the general area of Link 46, which was provided in the August 5, 1986 letter, was reflected in neither the PA/DEIS nor Figure 4-3 (Biotic Resources/Sensitive Species). These species include:

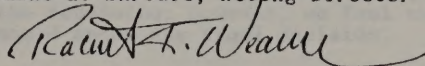
- 1) Spotted owl (Strix occidentalis lucinda); Arizona Group 4, Threatened Native Wildlife (TNW) list; USFWS Category II species.
- 2) Western jumping mouse (Zapus princeps); Arizona Group 3, TNW list.
- 3) Loach minnow (Tiaroga cobitis); Arizona Group 3, TNW list; Federal Threatened Species.
- 4) Narrow-headed garter snake (Thamnophis rufipunctatus); Arizona Group 3, TNW List; USFWS Category II Species.

We provide this information, here, only to ensure the accuracy and comprehensiveness of the Final PA/EIS.

We appreciate the opportunity to have been involved in this project, as well as having had the opportunity to review the PA/DEIS.

Sincerely,

Duane L. Shroufe, Acting Director



Robert K. Weaver
Habitat Evaluation Coordinator
Planning and Evaluation Branch

RKW:NLD:cal

cc: Mike Yeager, Supervisor, Pinetop Regional Office
Juan Romero, Wildlife Manager
State Clearinghouse, AZ 86-80-0045

LETTER #5 COMMENTS

RESPONSES

1218 South Dr.
Socorro, NM 87801

January 15, 1987

Juan Padilla
Bureau of Land Management
Las Cruces District Office
2800 Marquess Street
Las Cruces, NM 88005

Gentlemen:

The following comments pertain to the Draft PA/EIS for the Arizona Connection Transmission Line.

It is noted that Route C is the preferred route. As stated at the Socorro meeting we felt that any route which crossed the San Agustin Plains would inevitably have a significant impact on certain scientific uses such as have been made in the past and will almost certainly continue in the future. The following items are provided for consideration.

A 1. Electromagnetic interference for installations such as the VLA has been recognized in elimination of the 2H and 2J segments in Phase 1. Route C would effectively rule out the central and SW portion of the Plains for similar installations or experiments in the future. For example, some thunderstorm studies are very sensitive to power line fields and transients.

B 2. Paleoenvironment of the San Agustin Plains. Kathryn Clisby of Oberlin College in Ohio and Paul B. Sears of Yale University have studied the pollen record in core material from wells drilled in 1953 and 1958-59 to depths of 645 ft and 2000 ft respectively, near the center of the playa south of Horse Springs. A remarkable reconstruction of vegetation and climate reaching back millions of years has been made possible from their data. In further support of this work, Professor Loren Potter, a botanist at the University of New Mexico, made a careful study of the present pollen "rain" over the playa in the late 1950's. The proposed Route C passes very near or over the well sites. Cores from these wells have been studied by scientists from the US Geological Survey, the National Australian University, and the universities of Arizona and Colorado.

At a meeting of the New Mexico Academy of Science at New Mexico Tech in October 1982 several participants said that the

A The transmission line planning and environmental impact statement was prepared using data on existing and planned land uses and scientific experimentation. It is difficult to predict the facilities that may be constructed in the future, that are not now being considered. The National Radio Astronomy Observatory is satisfied that the transmission line will not interfere with their present or planned facilities (see comment letter #1).

B Your comments have been noted and will be considered in the final decision.

LETTER #5 (CONT.)
COMMENTS

RESPONSES

B

Plains of San Agustin provide the best example in the U.S., if not in the world, of a closed sedimentary basin for scientific study. The theme for this meeting of the NM Academy of Science was the San Agustin Plains. A number of papers were presented relating to scientific programs underway. The ancient Lake San Agustin which occupied the southwest part of the Plains and extended north beyond Route C had an area of approximately 250 square miles and a depth of 165 feet at its highest stage. More than 200 gravel beaches, bars, spits, and wavecut benches have been identified, many of which can still be seen from the Bursum Road that skirts around the southwest edge of the plains. The Lake level decreased to its present playa floor some 12 to 13 thousand years ago.

4. An exploratory well drilled to bedrock at 12,284 ft. by the Sun Oil Company in 1966 was given to New Mexico Tech for scientific studies after necessary sealing and capping were accomplished. It is some 6 miles west and south of the Agustin station.

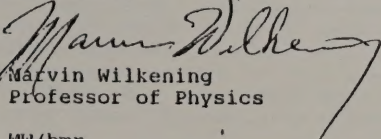
5. Micrometeorites from space are converted to tiny magnetic spheres in the earth's atmosphere and settle to the earth's surface. These have been studied in soil samples from the San Agustin playa which is unique because of its lack of water cover and its flatness (a maximum relief of 5 feet over one 5 mile by 7 mile area according to a survey made in 1959).

6. Bat Cave is a remarkable archeological site and has been covered in the EIS. Its importance in climate research and other scientific studies will almost certainly receive further attention in the future. Obsidian sourcing and absolute hydration rates for Bat Cave are underway by scientists at the U. of California at Irvine and at the U. of Michigan.

We simply wanted to have in the record some (not nearly all) of the scientific studies that have been conducted on that part of the San Agustin Plains impacted by the Route C. Research along these lines will almost certainly be continued in the future.

There are obvious advantages for Route C pointed out in the Draft PA/EIS. As shown in the foregoing, however, we feel that scientific considerations should enter the final decision.

Sincerely,


Marvin Wilkening
Professor of Physics

MW/bmr

cc: Harlan Smith
BLM Dist. 2
200 Neel Avenue
Socorro, NM 87801

LETTER #6 COMMENTS

January 21, 1987

Kerry M. Garrett
Box 80
Double Arrow Ranch
Winston, NM 87943

H. James Fox
Bureau of Land Management
Las Cruces District office
1800 Marquess Street
Las Cruces, NM 88005

Dear Mr. Fox:

I have currently reviewed the Arizona Interconnection Project Draft (E.I.S.). Due to my knowledge of the area northeast of Winston New Mexico, which was referred to as the Iron Mountain area in the draft, it has raised many questions about why this particular corridor route was considered as the preferred alternative.

- A** The Iron Mountain area more commonly known as the Cuchillo Mountains, was basically over looked when many of the statements for routes C&D were developed. The picture taken north of Winston is not a accurate example of the typical terrain which the proposed route is to travel through. As of the last public meeting held in Truth or Consequences on January 14, 1987, the preferred route which passes through the Cuchillo Mountains (north of Winston) contains many of the same problems which were viable reasons for eliminating other proposed routes. Due to the deep canyons and high ridges in this area, additional guy wires and turning structures would quite possibly be required which was one of the reasons El Paso Electric sited in order to replace link 35 and 36 with link 33 (page 3-20).
- B** A few of the problems are (briefly); the preferred route now passes over 1 residence, 3 wells, and 4 earth tanks used for watering game and livestock (Iron Mountain to link 25, approximately 10 miles). Page 5-6, 1st full paragraph states "Visual Impacts are considered adverse, direct and long term" with an example of, "The view from any residential or other sensitive land use or travel route". On page 2-6 at the bottom of the page states "Feature area's of exclusion are avoided (e.g. residences, wells and other sensitive land use features). The route also passes over the owners only access for the entire mountain range and the only accessible passage for livestock from one end of the mountain range to the other. To move the power line off of its proposed route in this area would be impossible because of the extreme slopes and rough, rocky terrain which adjoin tall peaks. One of the reasons given on page 3-19 for preferring route C was because of its expansion capabilities for more than one transmission line. It would be very difficult to expand this
- C**

RESPONSES

A The photo-simulation prepared for the Highway 52 crossing north of Winston is an accurate depiction of the project in this location; however, it was prepared for the potential crossing of Link 27, which was eliminated in the subroute analysis (see Table D-1 in the Draft PA/EIS). It is acknowledged that the terrain in this simulation is not typical of the full range and variation of terrain of Routes C and D. It is typical of a road crossing where the line could be viewed by the public. The links making up the alternative route across the Cuchillo Mountains were chosen because of their environmental preference. Guy wires and turning structures are necessary where the points of intersection are located (the intersection point of two straight-line segments). Where there are significant angles in the alignment on the south end of the Cuchillo Mountains, the structures will be engineered to withstand additional tension and will likely be guyed. EPE preference for Link 33 because of straighter alignment and reduction of visibility adjacent to Highway 26 is a localized occurrence.

B EPE does not intend to construct the route directly over any residence, well, tank or other active land use. The visual impacts to residences and travel routes are documented in the Draft PA/EIS and are known to be an issue in this project. The alternatives through the Cuchillo Mountains are relatively secluded from sensitive residential and travel route views. Mitigation measures, including slight route modifications and tower spacing and location, specific to the private lands in this area can be negotiated during the right-of-way discussions. EPE will work with the landowner to minimize conflicts of access and livestock operations. Damages to agricultural operation will be negotiated.

The statement on page 2-6 refers to the planning process that was followed in developing the alternative routes. One of the main siting criteria was to avoid, to the degree possible, ranch residences and their associated facilities. Routes C and D is approximately 500 feet away from the nearest residence. The statement on page 2-6 reads "Features or areas of exclusion are avoided.

C BLM and USFS regard Alternatives C and D as generally having good expansion capability for potential future transmission lines in the same area. Various segments of the route may be more difficult than others. EPE will agree to provide and maintain locked gates of a mutually agreed type and location into this area to prohibit increased access which may have an adverse effect on the private landowner or the environment.

LETTER #6 (CONT.) COMMENTS

page 2
H. James Fox

- C** [passage to accommodate more than one line without serious negative impact to the surrounding area. The Iron Mountain area has been under strict access control by the current private owners. The development of access and maintenance roads would greatly reduce the owners ability to control the area in order to minimize adverse environmental impacts.
- D** [The E.I.S. states on page 3-18 under the agency preferred route that the BLM/USFS chose route C given the near equal environmental impacts. However, both impacted National Forests (Gila and Apache Sitegraves) indicated on page 3-12 that the entry TEP corridor was a preferable corridor (Route E).
- E** [Page 2-7, 5th sentenced from the top of the page states "Routing on private lands is minimized in favor of public lands". Route C has almost 2 times as much private land (55 miles) as Route E (28.6 miles) as shown in table 4-4; land jurisdiction. Route C has the most miles of high and moderate water/wind erosion potential as shown by figure 4-1. It (Route C) also has the most miles of flash flood hazard also shown by table 4-1.
- F** [
- G** [Route C and D also have the highest potential for significant fossil discovery. Page 4-46, middle of the page state for route C, "That seventy-six miles (35%) of route C was scored "high" for potential significant fossil discovery and 99 miles (46%) were scored moderate for significant fossil discovery therefore, 81% of route C was scored high or moderate for significant fossil discovery potential. Also on page 4-46 it is stated that "The area north and east of the town of Winston (link 25)", is one of the lengthy stretches of high site density and potential significance discovery area's. Route E has only thirty nine miles (19) scored "high" for significant fossil discovery 85 miles (41%) were scored moderate (page 4-48). Therefore route E has only 60% of its route scored high and moderate as opposed to the 81% which was scored high and moderate for significant fossil discovery for route C. Also route C has nearly 2 times as many high sensitive archaeological/historical miles affected (76 miles) as route E (39.0 miles) as state in table 4-10, archaeological/historical sensitivity.
- H** [

RESPONSES

- D** The intent of the comment on page 3-12 is to state the USFS preference to study an alternative along the TEP corridor, rather than to study a new corridor in the Apache-Sitgreaves Forest in Arizona. This occurred during the scoping phase of the project. No alternatives were studied in detail through the Apache-Sitgreaves Forest.
- E** This issue is discussed in more detail in Chapter 2 of this document. More accurately, the description should read that for each alternative route that was studied the amount of private land crossed was minimized; for example, if there was a choice of crossing BLM or private land, the public land alternative was always taken. This was done during the initial layout of the study centerlines, so that a private land crossing was minimized to the degree possible on each alternative.
- F** It is true that the line crosses soils with high and moderate wind and water erosion potential; however, with proper mitigation the amount of disturbance expected with this project is expected to be minimal. Table 3-2 in the Draft PA/EIS displays the expected impacts to these resources. No high or moderate impacts are expected following mitigation. Flood hazard for a transmission line would generally be associated with tower site location. Any potential flash flood hazard areas will be avoided or spanned.
- G** Significant fossil resources may occur in the area, yet the potential disturbance to those resources with this project are expected to be negligible. Disturbance to a paleontological resource could occur in several ways: (1) during the augering of holes at the tower sites, and (2) during the grading operations for access road or tower pad construction. If there are any significant fossils discovered during the line construction, El Paso Electric has agreed to pay reasonable mitigation costs to recover the resource. Route E has had extensive field studies completed along its route because of the existing transmission facilities, and has the greatest amount of known and documented data. Routes C and D, by comparison, have very little known or documented data; its relative resource sensitivity and impacts determined through modeling procedures.
- H** ". . . route C has nearly 2 times as many high sensitive archaeological/historical miles affected (76 miles) as route E (39.0 miles) as state (sic) in Table 4-10, archaeological/historical sensitivity."

This is correct. Route E was accordingly ranked as the most preferable from a cultural resource perspective, while Route C ranked fourth. Cultural resources were, however, only one of the factors considered in developing a composite environmental evaluation of the alternative routes.

The Route E cultural resource assessment is based on a virtually complete inventory along the adjacent parallel existing corridor where 104 sites have been recorded. Far less of Route C crosses previously inventoried zones and only 52 sites are recorded along it. The assignment of higher sensitivity to Route C is based upon a model which remains to be tested by further survey. The model, which considers both resource quantity and quality, as well as the nature of projected impacts, indicates that the cultural resource sensitivity of Route C is approximately 25 percent greater than that of Route E.

A field archaeologist will accompany the surveying team during the setting of intersection points to ensure that archaeological/historical and other cultural resource sites are avoided. A 100 percent survey of the line route will also be completed under the Cultural Properties Act (as amended 18-6-5, 18-6-9, 18-6-11 NMSA 1978) to ensure that sites are avoided by tower sites, access roads, and other construction activities. Sites that cannot be avoided will be mitigated by excavation and recovery.

LETTER #6 (CONT.) COMMENTS

- I Visual impacts are considered adverse, direct and long term (page 5-6, 1st full paragraph). One example which was given in the same paragraph was a travel route. Route C parallels New Mexico highway 26 for 15.4 miles and crosses proposed scenic highways at three different points (page 4-22 under route C). Also on page 3-16, under route C, it states, "the route parallels state highway 12". The corridor also runs east from Iron Mountain (north and east of Winaton) "parallel to state highway 52, varying from one to three miles north of the road." However the paragraph does not address the question of how many miles of the power line will be seen from the highway 52. Route E only parallels 4 miles of U.S highway 180 as stated on page 4-23 under route E. Shouldn't this important consideration be addressed by a comprehensive E.I.S.?
- J In all instances route C has more proposed scenic road crossings (3), gravel pit crossings (5), continental divide national scenic trail - Gila National Forest crossings (5) and stock tank/corral crossings (5) than did route (table 4-5). I would also like to point out that under the proposed route C, there are 2 corral crossings and 4 stock tank crossings in the area from the northern end of Iron Mountain to link 25. Therefore all documented crossings for the entire route C are accounted for in an approximate 10 mile stretch. I am certain other crossings exist on route C which would imply the inventory was incomplete and additional adverse environmental impacts from crossings are virtually certain. This unintentional deletion adds further support for route E as the preferred route.
- K On page 4-11, 2nd paragraph explains that many different endangered bird species may occur in many segments of route C. The bald eagle and peregrine falcon have been reported in the Iron mountain area of route C. Table 4-3 does not reference these bird as being confirmed in any area of route C.
- L The Iron mountain area is a rough, rocky, terrain with steep slopes which are densely covered with juniper, cedar, pinion, oak and ponderosa pine. Table 4-2 does not refer to oak or alligator juniper for this area. According to

RESPONSES

- I The apparent size and potential visibility of this transmission line beyond one mile is such that a moderate impact could occur. Visibility mapping was completed from Highway 52 and from all potential viewpoints within the project influence area. The transmission line may be visible at a distance from Highway 52 for approximately 13.6 miles between the transmission line's crossing of Iron Mountain and Highway 52. The above-mentioned portion is not within the high to moderate threshold visibility zone, except at the road crossing.
- J Inventory maps included in the EIS Map Volume (Figures 4-5 and 4-6) illustrate major land uses within the study corridors. Range improvements, specifically stock tanks and corrals, are mapped only where the assumed right-of-way centerline would cross those features, since it is assumed that the operation of corrals or stock tanks located adjacent to the right-of-way would be unaffected by the project. In instances where a route would cross stock tanks or corrals, potential impacts would be mitigated by placing structures so as to avoid the feature, or allowing conductors to clearly span the feature in order to minimize disturbances (Mitigation Measure #8). Therefore, no residual impacts would result from crossing stock tanks or corrals.
- Regarding the possible omission of features from the inventory, the level of accuracy achieved was equivalent for all study corridors. The land use inventory for the Arizona Interconnection EIS study was carried out using 1:40,000-scale aerial photography, USGS quadrangle maps, county highway maps, and other sources where available. Air and ground reconnaissance was used to verify the data obtained from maps and photographs. While there may be pipelines and roads located in the vicinity of the proposed and alternative routes, the land use inventory included only major utility transmission pipelines located within established rights-of-way and roads appearing on county highway maps. Locations of cemeteries were determined from aerial photography, but individual gravesites were not included in the land use inventory. A Class III cultural survey will identify gravesites along the selected alternative.
- K Refer to Chapter 5 and Appendix B for an expanded discussion of bald eagles. It is very likely that bald eagles and peregrine falcons occur in the Cuchillo Mountain area of Routes C and D. However, no agency biologists identified that area as being an important winter concentration or nesting area. The habitat seems generally unsuited for nesting peregrines (no major cliff systems near water or prey species concentration areas). It is likely that many, if not most, of the peregrine falcon reports in the area are misidentified prairie falcons. Bald eagles may occur almost anywhere in west-central New Mexico during migration or as occasional winter visitors, but unless there is a major concentration area (e.g., an area of abundant food in the form of fish, ducks, or jack rabbits, or a roosting area), numbers of bald eagles are generally very low.
- L The Iron Mountain (Cuchillo Mountains) area was identified as being dominated by juniper and pinyon woodlands. Our aerial photography interpretation suggested that there are some patches of oak (probably emory oak) in some of the canyons along Link 25, but they were too small to map at the map scale used. If emory oak is present, it is possible that alligator-bark juniper is present as well. Both are Madrean woodland elements and often occur together. It was not possible using the aerial photography, however, to differentiate alligator-bark juniper from the much more common one-seed juniper. Moreover, if alligator-bark juniper is present, it most likely occurs as scattered individual trees as opposed to being common enough to form alligator-bark juniper woodland. Tables BIO3 and BIO5 from the technical report (available at BLM and USFS offices) detail the species found in the habitat types identified for these

LETTER #6 (CONT.) COMMENTS

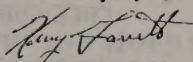
M table 3-1, access levels; would be type 3 in some area's (5% - 35% gradients) and possibly type 4 in other area's. It would require at least 1 to 2 miles of new access roads to be built per mile of transmission line. The road which is currently used in this area, is an unimproved, narrow path which utilizes arroyo bottom for most of the travel. Therefore, any additional road construction would lead to accelerated erosion because of the steep gradients encountered as the proposed new access roads are constructed and used.

N Route C would displace the largest amount of potential livestock grazing per mile of transmission line. Page 5-18 in the middle of the page shows 1.27 miles of acreage displaced per mile of transmission line. The next paragraph states "route C would displace the greatest amount of grazing land per mile of transmission line. Route E is rated 6th out of the 7 proposed routes for displacing the least amount of potential grazing land. The E.I.S also states it is an insignificant difference between the routes, but to a cattleman using these grazing land it is a significant amount of land to be taken out of their operation. The amount of potential grazing land adversely effected is 38.4 miles more for route C, calculated from page 5-18 and table 4-4. With this much surface disturbance (especially in the Iron Mountain region) it would contribute to accelerated erosion problems and lead further support for selection of route E for the preferred alternative.

O Route E already has an existing corridor and could be made large enough to handle the new power line with less affected area. Route E is also a shorter route and contains half as much private land as route C. Page 2-7 indicates that for route E, location parallel to existing transmission lines or utility corridor is maximized and routing on private lands is minimized in favor of public lands (page 2-7).

In summary of the following points: Additional guy wires needed, visual impact from residences and highways, increasing access into an area, preferring public lands over private lands, preferring existing corridor, insufficient data on land crossing, more access roads required, more miles of transmission line, more miles of water/wind erosion, more miles of flash flood hazard area, interfering with an important land owners access for operational purposes, and adverse effect on more grazing land, route C should not be a preferred alternative over Route E.

Thank you,



Kerry Garrett

amq

RESPONSES

M Erosion hazard is acknowledged to be a potential problem in the construction of roads. It is not anticipated that any Level 4 access will be necessary in this area. Level 3 access is estimated between mileposts 1.8 and 2.1 on Link 23, mileposts 3.5 and 7.9 on Link 24, and mileposts 5.1 to 6.1 on Link 25. In order to reduce the potential soil erosion impacts, committed mitigation measures for the project are listed in Tables 5-1 and 5-2 in the Draft PA/EIS. Further, BLM and USFS will require detailed road-management plans from El Paso Electric prior to issuance of special use permits on public lands. Private landowners will negotiate road construction and potential mitigation with EPE during right-of-way negotiations.

N The table on page 5-18 is incorrect for Route C. Acreage displaced per mile is estimated to be 1.37 and not 1.27 as printed. See Chapter 5 for the corrected table. The calculations in the Draft PA/EIS are based upon initial "worst-case" assumptions for disturbance from road and tower construction. On flat or rolling terrain, it will not be necessary to construct roads or blade the vegetation from tower assembly sites. Because there are roads existing through much of the Cuchillo Mountains (Iron Mountain area), very little new access will be necessary. It is acknowledged that the soils in this area are extremely erosive. Surface disturbance and rehabilitation will be negotiated with the owner during right-of-way discussions.

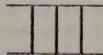
The difference in disturbance from Routes C, D and E is approximately one-quarter acre per mile of transmission line. The vegetation mapping presented under "Biological Resources" in the EIS and estimates of carrying capacities for different vegetation types provided by BLM and USFS were used to estimate grazing capacity displaced by route. Under a worst case scenario, Route E would displace an average of 35 animal-unit-months (AUMs) while Alternative C would displace an average of 46 AUMs. It is important to recognize that this displacement would be spread out across the full length of the alternatives, not concentrated in any one location. One reason for the lower displacement for Route E is that segments of the line along Route E would be installed by helicopter.

O The environmental resource data are only one of the criteria for the preferred route as outlined by BLM and USFS in Chapter 3 (pp. 3-18 and 3-19). In addition to environmental considerations, other criteria include potential for rehabilitation, expansion, system reliability, and cost.

LETTER #7 COMMENTS

LADDER RANCH

Star Route, Box 95
Caballo, New Mexico 87931
505-895-5383



December 31, 1986

Mr. Juan Padilla
Bureau of Land Management
Las Cruces District Office
2800 Marquess Street
Las Cruces, New Mexico 88005

Dear Mr. Padilla:

A I have written to you several times indicating my feeling in connection with the proposed transmission line. This letter is my formal comment with respect to the drafted recommendation for running the transmission line on the easterly route and especially how it concerns the Ladder Ranch.

As I have stated in several previous letters, I believe that since this project is for the public welfare, that public lands should be used to the exclusion of private land wherever required. This would mean that the best route for the transmission line would be the westerly route which crosses primarily forest and BLM lands. That route is also shorter. The ranching business, as the general public now knows, has been in a state of depression for at least two years. Grazing fees to the government have continued to rise while prices remain low. This matter is also affected by the United States Government's attitude to foreign imports and exports. The deterioration of private lands by publically used transmission lines is just one more straw on the "camel's back".

It appears from the draft, that the line is proposed to travel through approximately six miles of the Ladder Ranch deeded land. At one time, a proposal was made for the transmission line to "bubble" around the east side of the ranch and remain on public lands. We still highly recommend this solution even though we know that there would be some slight increase in cost to the utility.

B We say this for several reasons: In the first place, the ranch has been a closed ranch for many years and has remained a game preserve for many types of native species. By running the line through the ranch, the ranch will of necessity become open to some extent. In addition, we believe that the ranch will be significantly depreciated in value by having the line through six miles of the eastern portion of the ranch. We believe that there will be a significant dispute over the amount of devaluation of the ranch which ultimate-

C

RESPONSES

A For each alternative identified, the amount of private land was minimized. During the initial layout of each alternative, if there was a choice of routing on land administered by BLM or USFS versus private land, it was taken. The "bubble" on the eastern site of Ladder Ranch was studied in response to your input into the planning process.

B Any new access roads on private land will be locked with a gate at the owner's request to limit illegal entry.

C While various studies of property value impacts have been conducted, there is no conclusive evidence to suggest that transmission lines reduce the value of adjacent properties. Some studies have shown no substantial decrease in value, while others have indicated property values to be depressed.

LETTER #7 (CONT.)
COMMENTS

RESPONSES

LADDER RANCH

Star Route, Box 95
Caballo, New Mexico 87931
505-895-5383

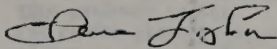
III

Mr. Juan Padilla
December 31, 1986
Page Two

C ly may result in protracted condemnation proceedings. We wish to emphasize that in the event there is not an agreement with respect to the valuation of the easement, we will not hesitate to protect our rights to the extent of the law. We are also not waiving our right to dispute the necessity of the condemnation.

I sincerely hope that the drafters will reconsider the westerly route and in the alternative, at least the "bubble" thus avoiding the Ladder Ranch in its entirety.

Very truly yours,



GENE LYDA

cc: Mr. James E. Jensen
Mr. Darwin Jensen

LETTER #8
COMMENTS

RESPONSES

El Paso
Natural Gas Company

P. O. BOX 1492
EL PASO, TEXAS 79978
PHONE 915 541 2600

January 16, 1987

Bureau of Land Management
Las Cruces District Office
2800 Marguess Street
Las Cruces, New Mexico 88005

Attention: Mr. Juan Padilla

Re: R/W 860500 - Encroachment: WIRTH;
345 KV Transmission Line - Various
Facilities, New Mexico and Arizona

Gentlemen:

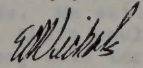
Our Company has completed its review of your letter and drawings concerning the captioned.

It has been determined that the route which would have the least impact on our facilities would be route C. The least preferable route for El Paso would be route E, which would run parallel to and cross our lines in several locations.

In any case, if it is determined that mitigation will be required by El Paso, the Arizona Interconnection Line Project will be backcharged. El Paso requests a copy of your plans as soon as it is determined which route is to be used so that we will have sufficient time to determine the correct mitigation requirements and design said system.

Your cooperation is greatly appreciated, and should you have additional questions, please do not hesitate to contact Mr. Jerry Ricci, Right of Way Dept., telephone 915/541-2234.

Very truly yours,


Edwin O. Nichols
Coordinator
Securities Group
Right of Way Department

GR:ek

No response necessary.

Jan 21, 1987

Jaun Padilla
BLM
2800 Marquess St
Las Cruces NM 88005

Sir:

I am writing as a concerned citizen of New Mexico regarding the Arizona Interconnection Transmission Line Project. I feel that these transmission lines make a negative visual impact. Surely, if these lines must cross the state, they can follow existing corridors such as Route E rather than scarring new territory along the east face of the Black Range and across the Plains of San Agustin.

I'd like to comment on remarks regarding Route E made in the Draft PA/EIS from WIRTH Environmental Services. If the terrain, altitude, and forest fire exposure hazards were very bad then surely Tucson Electric Power (TEP) would not have located their transmission line where they did. Also, I'm positive that as I drove through Luna

A It is agreed that transmission lines cause a negative visual impact. However, the visual impacts are only one of many factors considered when a decision on a right-of-way route is made.

B Routes C, D and E are all considered acceptable environmentally. The rationale for the agency preference was outlined in the Draft PA/EIS, pages 3-18 and 3-19, and the Final PA/EIS, pages 2-27 and 2-28. Only portions of the Tucson Electric Power transmission line contain double circuit towers. The double-circuit towers are for TEP future use. EPE is not proposing a second circuit from Springerville to Luna at this time.

LETTER #9 (CONT.)
COMMENTS

B

last year I noticed that only half the number of cables were installed on those towers. Therefore, there is already a built in reserve for TEP to fall back on. If El Paso Electric were to build their line in Route E and were to put up towers large enough to carry cables for future use they would no doubt save money in the future.

C

Since studies regarding cultural resources have already been completed for Route E EPE should save money by not having to study an alternate route.

For all these reasons I hope that EPE will be issued Route E as the location in which to build their transmission line.

Thank you
L A Buena
Amma's Circle
Caballo NM 87931

RESPONSES

C

On any route selected, a 100 percent cultural resource survey will be completed within the area to be occupied by the right-of-way and access roads.

LETTER #10 COMMENTS

RESPONSES

A

FEDERAL ASSISTANCE		2. APPLICANT'S APPLICATION IDENTIFIER	3. STATE APPLICATION IDENTIFIER	4. NUMBER
1. TYPE OF SUBMISSION (Mark appropriate box) <input type="checkbox"/> NOTICE OF INTENT (OPTIONAL) <input type="checkbox"/> PREAPPLICATION <input type="checkbox"/> APPLICATION	5. DATE Your month day 10	6. DATE ASSIGNED Your month day 10	7. STATE APPLICATION IDENTIFIER NOTE TO BE ASSIGNED BY STATE	8. NUMBER 86800045
4. LEGAL APPLICANT/RECIPIENT a. Applicant Name: Bureau of Land Management b. Organization Unit: New Mexico State Office c. Street/P.O. Box: P.O. Box 1449 d. City: Santa Fe e. State: New Mexico f. Contact Person (Name & Telephone No.): Monte G. Jordan, Action State Director		9. EMPLOYER IDENTIFICATION NUMBER (EIN) 15-19919		
7. TITLE OF APPLICANT'S PROJECT (Use section IV of the form to provide a summary description of the project) DRAFT ARIZONA INTERCONNECTION PROJECT PLANNING AMENDMENT/ENVIRONMENTAL IMPACT STATEMENT--MOST OF THE PROJECT DEALS WITH NEW MEXICO, HOWEVER, ALTERNATIVE F RUNS THROUGH A PORTION OF GREENLEE COUNTY, ARIZONA		8. TYPE OF APPLICANT/RECIPIENT a. State b. Community c. County d. City e. Other (Specify) federal agency		
9. AREA OF PROJECT IMPACT (Name of river, coastline, etc.) GREENLEE COUNTY, ARIZONA		10. ESTIMATED NUMBER OF PERSONS BENEFITING 10		
12. PROPOSED FUNDING a. FEDERAL \$.00 b. APPLICANT .00 c. STATE .00 d. LOCAL .00 e. OTHER .00 f. Total \$.00		13. CONGRESSIONAL DISTRICTS OF: a. APPLICANT b. PROJECT 15. PROJECT START DATE 10 16. PROJECT DURATION Months 17. DATE DUE TO FEDERAL AGENCY 10		
10. FEDERAL AGENCY TO RECEIVE REQUEST a. ORGANIZATIONAL UNIT (IF APPROPRIATE) b. ADMINISTRATIVE CONTACT (IF KNOWN) c. ADDRESS SAME AS ABOVE		14. TYPE OF APPLICATION a. New b. Renewal c. Extension d. Continuation e. Amendment f. Other (Specify) 17. TYPE OF CHANGE (For 14 or 16) a. American Culture b. American Customs c. American Cuisine d. American Dress e. American Language f. American Literature g. American Music h. American Religion i. American Science j. American Social Life k. American Sports l. American Visual Arts m. American Writing n. Other (Specify)		
22. THE APPLICANT CERTIFIES THAT: To the best of my knowledge and belief, the information provided in this preapplication/application is true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurance if the assistance is approved.		20. EXISTING FEDERAL GRANT IDENTIFICATION NUMBER		
23. CERTIFYING REPRESENTATIVE a. TYPED NAME AND TITLE b. SIGNATURE		21. REMARKS ADDED <input type="checkbox"/> Yes <input type="checkbox"/> No		
24. APPLICATION RECEIVED 10 Your month day		25. FEDERAL APPLICATION IDENTIFICATION NUMBER		
27. ACTION TAKEN <input type="checkbox"/> a. AWARDED <input type="checkbox"/> b. REJECTED <input type="checkbox"/> c. RETURNED FOR AMENDMENT <input type="checkbox"/> d. RETURNED FOR E.O. 12372 SUBMISSION BY APPLICANT TO STATE <input type="checkbox"/> e. DEFERRED <input type="checkbox"/> f. WITHDRAWN		26. FEDERAL GRANT IDENTIFICATION 28. ACTION DATE 10 29. CONTACT FOR ADDITIONAL INFORMATION (Name and telephone number)		
28. FUNDING a. FEDERAL \$.00 b. APPLICANT .00 c. STATE .00 d. LOCAL .00 e. OTHER .00 f. TOTAL \$.00		30. STARTING DATE 10 31. ENDING DATE 10 32. REMARKS ADDED <input type="checkbox"/> Yes <input type="checkbox"/> No		

A

No response necessary.

LETTER #10 (CONT.) COMMENTS

RESPONSES

TO:

SHPO
Arizona State Parks Board
1688 W. Adams, Rm. 109
Phoenix, AZ 85007

State Application Identifier (SAI)

DEC 10 1986

State AZ No

86 800045

Region VI
Parks
Game & Fish
Ag. & Hort.
Water
Public Safety
Transportation

RECEIVED

DEC 11 1986

ARIZONA STATE
PARKS BOARD

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☐ No comment on this project ☐ Proposal is supported as written ☒ Comments as indicated below

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency
2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No
3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No
4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No
5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No
6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No
7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

B Consultation with SHPO will occur pursuant to 36CFR Part 800.

Additional Comments (Use back of sheet, if necessary): *Concur with recommendations listed on page 5-26 re: 36 CFR Part 800. Consultation with SHPO should occur pursuant to 36 CFR Part 800. Recommend alternative with least impact to cultural resources.*

Reviewer's Signature Shirleen Lerner

Date 12/18/86

Title Deputy SHPO

Telephone 255-4174

LETTER #10 (CONT.) COMMENTS

RESPONSES

TO:

State Application Identifier (SAID)

DEC 10 1986

State AZ No

86 800045

Director
Agriculture & Horticulture Dept
421 Capitol Annex West
Phoenix, AZ 85003
LLT 13

Region VI
Parks
Game & Fish
Ag. & Hort.
Water
Public Safety
Transportation

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☐ No comment on this project ☐ Proposal is supported as written ☒ Comments as indicated below

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency
2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No
3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No
4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No
5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No
6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No
7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

C No response necessary.

Additional Comments (Use back of sheet, if necessary) *IT IS INDICATED THAT ALTERNATE Route (C) IS THE PREFERRED ROUTE. THIS ROUTE DOES NOT ENTER THE STATE OF ARIZONA AND AS THE RESULT NO EIS ON THE NATIVE PLANT REQUIREMENTS ARE NECESSARY. ARS 3-901-910.*

Reviewer's Signature *RACountingman*

Date *12-16-86*

Title *Assistant, Eastern Region*

Telephone *255-4373*

LETTER #11 COMMENTS

RESPONSES

H. James Fox
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, N.M. 88005

Re: Arizona Interconnection
Project Draft (E.I.S.)

Dear Mr. Fox:

I am a very concerned citizen of the Winston, and Cuchillo Mountains Area. My whole family has been coming to this unspoiled area for recreational purposes since 1943; because it has been virtually unspoiled by man. The rugged Mountains, rolling hills, Prestine Forrest, the great variety of trees, flowers, under brush, wildlife, and birds. Now, I have retired here, as many others have because of the remote and unspoiled area.

My greatest concern is for the land, trees, and wildlife.

- A** [#1. Your highline would nessitate miles and miles of road, causing great erosion and flooding problems. In my many years of observing nature; I find that our Mountains are the most fragil of all terrain! A bulldozer crosses the terrain, thus disturbing the soil 2 FEET DEEP: the rains come and away it goes!
- B** [#2. These roads would open up more miles of access to the Prestine forrest for illegally harvesting of trees for fire wood.
- [#3. These roads would give unauthorized access to "Slob" hunters (road hunters) which would deminish our ever dwindling game. Our game is being pushed into ever smaller and smaller habitats. We need this area Road Free for their existance!
- C** [And then there are our birds: your high lines killa certain amount of our birds of prey (eagles, falcons, etc) no matter how careful you are. And then there ore the "Slob Hunter" love to target practice on the birds perched on the high line poles.

In summery: I wish to make my position clear; Route E already has an exist- ing corridor. USE IT- do NOT tear up NEW land which would have a great negative affect on the Winston-Cuchillo Mountain Area.

Thank YOU,

Gwynevere Morris
P.O. Box 117
Winston, N.M. 87943

- A** It is acknowledged that soils are highly erosive in many areas of the preferred alternative. With the adoption of the generic and the specifically committed mitigation measures, the long-term impacts to soils are anticipated to be low for all alternatives. Private landowners will negotiate these issues during right-of-way discussions. The BLM and USFS will enforce specific mitigation on public lands.
- B** It is not expected that the proposed access road construction in the forest will have a significant impact on illegal harvesting of trees. Any increase of access on public lands for this project will follow federal road management policies outlined in the management plans. Many roads on private lands will be locked at the owner's request. New roads are not expected to have a significant impact on illegal hunting activities.
- C** The design of the transmission line precludes electrocution of birds. In our impact analysis, bird collision hazard in the project area was not considered significant. Shooting of raptors and other birds perched on transmission lines is a concern of the New Mexico Department of Game and Fish, and is an unquantifiable residual impact. It is not considered to be significant.

LETTER #12 COMMENTS

H. James Fox
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, N.M. 88005

Re: Arizona Interconnection
Project Draft (E.I.S.)

Dear Mr. Fox:

I am a very concerned citizen of the Winston, and Cuchillo Mountains Area. My whole family has been coming to this unspoiled area for recreational purposes since 1943: because it has been virtually unspoiled by man. The rugged Mountains, rolling hills, Prestine Forrest, the great variety of trees, flowers, under brush, wildlife, and birds. Now, I have retired here, as many others have because of the remote and unspoiled area.

My greatest concern is for the land, trees, and wildlife.

- A [#1. Your highline would nessitate miles and miles of road, causing great erosion and flooding problems. In my many years of observing nature; I find that our Mountains are the most fragil of all terrain! A bulldozer crosses the terrain, thus disturbing the soil 2 FEET DEEP: the rains come and away it goes!
- B [#2. These roads would open up more miles of access to the Prestine forrest for illegally harvesting of trees for fire wood.
- [#3. These roads would give unauthorized access to "Slob" hunters (road hunters) which would deminish our ever dwindling game. Our game is being pushed into ever smaller and smaller habitats. We need this area Road Free for their existance!
- C [And then there are our birds: your high lines killa certain amount of our birds of prey (eagles, falcons, etc) no matter how careful you are. And then there are the "Slob Hunter" love to target practice on the birds perched on the high line poles.

In sunnery: I wish to make my position clear; Route E already has an exist-ing corridor. USE IT- do NOT tear up NEW land which would have a great negative affect on the Winston-Cuchillo Mountain Area.

Thank YOU,

Nell Doyle
P.O. Box 117
Winston, N.M. 87943

This letter has been retyped due to poor reproduction quality.

RESPONSES

- A It is acknowledged that soils are highly erosive in many areas of the preferred alternative. With the adoption of the generic and the specifically committed mitigation measures, the long-term impacts to soils are anticipated to be low for all alternatives. Private landowners will negotiate these issues during right-of-way discussions. The BLM and USFS will enforce specific mitigation on public lands.
- B It is not expected that the proposed access road construction in the forest will have a significant impact on illegal harvesting of trees. Any increase of access on public lands for this project will follow federal road management policies outlined in the management plans. Many roads on private lands will be locked at the owner's request. New roads are not expected to have a significant impact on illegal hunting activities.
- C The design of the transmission line precludes electrocution of birds. In our impact analysis, bird collision hazard in the project area was not considered significant. Shooting of raptors and other birds perched on transmission lines is a concern of the New Mexico Department of Game and Fish, and is an unquantifiable residual impact. It is not considered to be significant.

LETTER #13 COMMENTS

January 23, 1987
Dan Garrett
Double Arrow Ranch
Winston, N.M. 87943

Mr. Juan Padilla
Bureau of Land Management
Las Cruces District Office
1800 Marquessa St.
Las Cruces, N.M. 88005

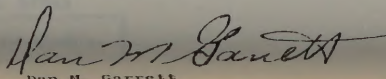
Dear Mr. Padilla,

I have been attending the public Meetings for the proposed El Paso Electric 345 KV transmission line for two years. After attending the meetings and reviewing the Arizona Interconnection Project Draft (EIS) I believe several important questions need to be carefully considered.

- A** [1. What viable reason is there for putting a 345 KV transmission line on 210 miles of undisturbed land?
The answer is none, since there is an existing corridor with two transmission lines and room for one more.
- B** [2. What are the comparable costs of Route E and Route C?
Route E might have higher construction costs than Route C, but this does not include buying rights of way, costs of condemnation suits or law suits that may be filed.
- C** [3. What does the EIS say in regard to the least disruption of environmental resources?
Following the comparison of the seven final options associated with both the eastern and western alternatives, Route E is identified as being the alignment that would result in the least disruption to environmental resources (page 3-17).
- D** [4. How do Route E and Route C compare as a cause for future erosion?
New access roads necessary (Route Inventory Assessment Summary, Table 3-2):
Route C - 163 miles
Route E - 10.3 miles
- E** [5. Why did the EIS omit mention of the protected species on Route C?
The Peregrine Falcon and Bald Eagle are seen quite regularly in the portion of Link 25 that runs north of Iron Mountain to Bootlegger Gap.
- F** [6. How do Route E and Route C compare in Table 4-2 Vegetation Types?
Oak Woodland and Alligator Juniper are both present in Link 25 but not noted in the study. Ponderosa Pine, also present in Link 25, is not mentioned (page 4-9). With a right of way and construction in Link 25, the Ponderosa Pine would be almost completely eliminated in this area.

I enclose a copy of a letter written by my son, Kerry Garrett. I am in full agreement with it.

Thank you.


Dan M. Garrett

RESPONSES

- A** The impacts of the alternative routes are summarized on Table I-1 in the summary. Decision criteria for selection of the preferred route is discussed on pages 3-18 and 3-19 of the Draft PA/EIS.
- B** The estimated construction cost for Route E is \$44.9 million, and for Route C is \$33.3 million. Right-of-way costs have not been determined.
- C** Route E was identified as being the alignment that would result in the least disruption to environmental resources. However, Routes C and D are similar to Route E in environmental impacts and are ranked equally for preference of the eastern alternatives.
- D** After committed mitigation, it was determined that Route C would have 8.3 miles of high impact and Route E would have 4.7 miles (see Draft PA/EIS, page 5-5). However, the long-term impacts to soils are anticipated to be low for all alternatives.
- E** The only areas identified by the U.S. Fish and Wildlife Service and the State of New Mexico, Department of Game and Fish that were of concern relative to peregrine falcons occurred on Links 41 to 45 (parts of Routes E, F and G). There were no peregrine falcon areas identified anywhere on Routes C and D. Dr. John P. Hubbard, New Mexico Game and Fish Department, has indicated (personal communication, April 8, 1986) that he feels most peregrine falcon observations in areas traversed by Routes C and D are actually misidentified prairie falcons which are relatively common in west-central New Mexico. The aerial photographic interpretation of the area traversed by Routes C and D in the Winston area is that most of the habitats crossed are juniper-pinyon woodlands and juniper grasslands with no flowing water or large standing bodies of water near major cliff systems. The latter suggests rather strongly that the habitat involved is not ideal nesting habitat for peregrine falcons. Peregrines could occur in the area, however, during migration or in winter. If peregrine falcon nests are discovered in the area, EPE will avoid those habitats and cease construction in the area during nesting periods.
- F** You are correct that oak woodland, alligator juniper, and ponderosa pine are present in Link 25. Table 4-2 shows vegetative types. Each vegetative type contains many plant species. Alligator-bark juniper, Arizona oak, Emory oak, gray oak, and Mexican blue oak are characteristic plant species found in the pinyon juniper habitat. Ponderosa pine is acknowledged to exist in a small area of Link 25. Careful final alignment through this area during right-of-way negotiations will minimize impacts to overstory vegetation.

LETTER #14 COMMENTS

RESPONSES

January 27, 1987

Juan Padilla
Bureau of Land Management
Las Cruces District Office
2800 Marguess Street
Las Cruces, New Mexico 88005

Dear Juan,

I strongly protest the proposed Arizona Interconnection Transmission Line through my property at Cuchillo, New Mexico. The power line will pass very close to our new home site and also cross through our farm land.

I am listing the reasons why I believe the proposed transmission line should be moved to another location.

- A [a. The power line will pass less than $\frac{1}{4}$ mile from our new home site. The home should be completed by August 1987. It is absolutely unacceptable to have an ugly power line to look at from the front room window. There is a possibility of radio and TV interference from the energy of the line.
- B [
- C [b. The power line will pass through our farm land. There is very limited farm land in the Cuchillo Valley. The largest portion is located where this line is proposed. The danger associated with heavy equipment working under a power line of this magnitude is not acceptable.
- D [c. I have plans to build a landing strip for small aircraft behind the farm headquarters. The approach procedure to the airport will be blocked by the power line.
- E [d. There are miles of nonresidential and nonagricultural areas in the Cuchillo Canyon where the power line may cross. I believe that the selection of the present site was not well planned. I would like to meet with your representative and show them a site most suitable to all parties concerned.
- F [e. I did not receive proper notification of the proposed transmission line. I know that I am entitled to due process of encroachment. The process was not properly served because of failure to provide me notice in a timely manner. The proposal did not take into consideration my vital requirements of livelihood and investment. The value of my ranch would be reduced to a fraction of its appraisal. The ranch represents the lifetime investment of my grandfather, my father, and myself. To strike down the investment when there are many other options is unnecessary.

- A Final location on private land will be determined during right-of-way negotiations. If possible, the line may be rerouted across your property to achieve a more acceptable distance from your new home site. EPE will mitigate visual impacts to the degree possible across private lands; e.g., utilize nonspecular conductors and locate tower sites in locations that will cause the least visual disruption.
- B EPE has committed to reduce any radio and television interference that results from operation of the transmission line to preconstruction levels.
- C Your comments have been noted. When the final alignment and tower locations are determined in the field, it may be possible to locate along field edges or span fields to limit or eliminate conflicts with agricultural practice. Additionally, during right-of-way acquisition it will be possible to negotiate damages resulting from withdrawal of productive acreage.
- D Final location on private land will be determined during right-of-way negotiations.
- E Final location on private land will be determined during right-of-way negotiations.
- F Proper notification has been provided according to NEPA. Every effort was made to contact the public regarding the proposed studies (please refer to Chapter 3 of this document). Right-of-way and encroachment is not determined in the Draft or Final PA/EIS. While various studies of property value impacts have been conducted, there is no conclusive evidence to suggest that transmission lines reduce the value of adjacent properties. Some studies have shown no substantial decrease in value, while others have indicated property values to be depressed. See Right-of-Way Acquisition and Compensation, page 5-17 of the PA/DEIS.

LETTER #14 (CONT.)
COMMENTS

2

f. I request that the power line, proposed as the Arizona Interconnection Transmission Line, is constructed at a location away from home sites and farm land. The proposed right-of-way of the power line at Cuchillo will cause danger to my family, deface the immediate site of my home, and greatly reduce the value of my farm and ranch.

I sincerely hope that you take positive action and consideration on my request and provide relief to this unnecessary disaster.

Sincerely,

Salomon G. Infusa

Salomon J. Tafoya
1004 Marron Circle, NE.
Albuquerque, New Mexico 87112

RESPONSES

LETTER #15
COMMENTS

January 28, 1987

Juan Padilla
Bureau of Land Management
Las Cruces District Office
2800 Marquess St.
Las Cruces, N.M. 88005

Dear Mr. Padilla:

I am writing to you to protest the proposed routing of the Arizona Interconnection Transmission Line along the east face of the Black Range. I feel it would be a short-sighted mistake to let encroaching technology ruin this magnificent vista for each generation to come. With so few unspoiled places left for people to enjoy, it's in the public interest to contain man's impact as much as possible; therefore, I strongly urge the adoption of "Route E" instead, using an area where such lines are already in place.

Although I live in Austin, my family and I own property near the Gila National Forest and visit there frequently, and we all share a deep interest in preserving the unique beauty of the Black Range.

Thanks for the opportunity to express my opinion.

Sincerely,

Suzanne Freeman

Suzanne Freeman
1602 E. Dessau Rd.
Austin, TX. 78753

RESPONSES

No response necessary.

LETTER #16 COMMENTS



United States
Department of
Agriculture

Forest
Service

Region 3

517 Gold Avenue, SW
Albuquerque, NM 87102

Reply To: 1950

Date: JAN 20 1991

11/2

H. James Fox
District Manager
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

Dear Mr. Fox:

We have completed our review of the draft environmental impact statement for the Arizona Interconnection Project. We have identified a number of items that need to be addressed in the final environmental impact statement. A detailed list of comments by section and page number is enclosed. Our comments can be summarized into the following major areas of concern:

- A**
1. The organization and presentation could be changed to improve readability and shorten the final document. Chapters 1 and 2 could be combined. Chapter 3 needs to more closely follow the purpose described in the CEQ regulations. We feel Chapter 3 should clearly describe the alternatives and provide a comparison of how the issues are addressed by each of the alternatives. Chapter 4 contains a great deal of information that addresses impacts that would be more properly included in Chapter 5. Much of the information in the technical reports is repeated in the environmental impact statement. It would be sufficient to reference the technical reports and avoid the repetition of technical information.
 2. The routing alternatives are the alternatives considered in detail and should be identified as such. Also, the alternatives need to be described in terms of the identified major issues. The alternatives eliminated from detailed study need more supporting rationale for their elimination. We feel that the no action alternative should not be eliminated and needs to be included and analyzed along with the other alternatives considered in detail.
 3. Treatment of the major issues needs to be improved. The major issues need to be clearly described and documented as resulting from the scoping process. The description and comparison of alternatives and the discussion of environmental effects should focus on these issues.

RESPONSES

- A** Chapter 3, Alternatives Including the Proposed Action, has been rewritten to provide more input into the planning regulations of the USFS and BLM. It is presented in this document as Chapter 2, Alternatives/Issues and Concerns. It is recognized that there is a certain amount of overlapping information in Chapters 4 and 5 of the Draft PA/EIS. Chapter 4 presents the affected environment or the environmental setting of the project area. In addition to a description of the resources, this discussion includes the sensitivity of the environmental resources to disturbance; e.g., resource value, scarcity (quality and quantity), etc. Chapter 5, Environmental Consequences of the Proposed Action, describes how the resources, with their variable sensitivity, would be disrupted by construction activities and operation of the project.

Some of the information in the technical reports is repeated in the Draft PA/EIS to present important information in the document that was more readily available to reviewers and to the public. Data and information that was considered vital or useful to the public to increase their project understanding was printed in the Draft PA/EIS. The presentation of impacts is detailed by link and milepost in the technical report, and a full explanation of the resource study and overall planning methodology is contained. The DEIS is a summary of the data and discussion in the technical report with emphasis on comparison of the impacts by alternative. A limited number of technical reports are available for public review in local BLM or USFS offices.

- B** An expanded discussion of alternatives and issues can be found in Chapter 2 of this document.

LETTER #16 (CONT.)
COMMENTS

Mr. Fox

2

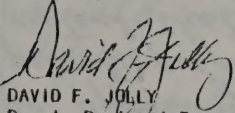


- C 4. Descriptions of the effects of the alternatives need to be strengthened particularly with respect to issues involving water courses, riparian areas, and wildfire risks. Ranking indices mask the effects of the alternatives on individual environmental components. The effects on individual components need to be displayed for the major issue areas as a minimum.
- D 5. The Gila National Forest has a final land management plan. This project may require amendment or revision of that Plan. The effects of each of the alternatives on the forest plan goals and objectives needs to be included in the final environmental impact statement to facilitate evaluation of significance concerning needed changes in the plan. Forest personnel will provide an analysis of these effects for inclusion in the final document.
- E 6. Documentation of the process to be followed in road management planning for each section needs to be included in the final document.

We recognize that our agencies may have slightly different NEPA implementing procedures. We hope that the final document can satisfy both agencies standards and provide a sound basis for our decision of the final powerline location.

We will continue to work with you to expedite the needed changes so the project may move forward. If you need additional assistance, please contact our coordinator, Bob Schloss (505) 388-8272 or our NEPA coordinator, Ron Senn (505) 842-3214.

Sincerely,


DAVID F. JOLLY
Deputy Regional Forester

Enclosure

cc:
Resource Staff Directors
Supervisor, Gila NF

RESPONSES

- C See Chapter 2 for an expanded discussion on water courses, riparian areas and fire suppression. The environmental impacts by major resource are detailed in Volumes 2 (Tables ER-2, ER-4, and BIO-14), 3 (Tables LU-8 and VR-14) and 4 (Table CR-9) of the technical reports by link and by milepost. Significant effects are identified by localized occurrences of the impacts, and are defined as being a "high" impact. Ranking the routes is used only to identify preference and select the route for each resource which has the least impact. This method was used to help illustrate the preferred route selection process. See Chapter 2 for expanded discussion of issues and alternatives.
- D See Chapter 2 for an expanded discussion on the effects to the Forest Plan.
- E See Chapter 2 for a discussion of road management planning and construction access as provided by the USFS.

LETTER #17
COMMENTS

RESPONSES

Jan 31, 1986

Bureau of Land Management
District Office
1800 Marquess Street
Las Cruces, N. Mex 88005

A

In this whole process there has been an appalling lack of representation of private property interests, even to the extent that it violates the law. An impact statement was to address the total environment affected and yet the preferred route was selected only from information developed by federal agencies which did not include any private lands as to endangered species or cultural or visual resources.

B

Continual reference is made to on ground inspections and yet I know of no land owner in a 50 mile section of the power line who was contacted personally or saw any one on their property prior to the site selection process.

C

There also is no addressing of the cumulative impact of the proposed alternative to the area. It seems to be the philosophy that if

A

Land jurisdiction and ownership were not a consideration when developing resource inventories, resource sensitivity, or impacts anticipated from the proposed project. Private lands were considered equally with federal or state lands. Environmental studies, including threatened and endangered species, cultural and visual resources, were conducted for both public and private lands. Information constituting the resource inventories was obtained from available sources including state, county, and local authorities, regardless of affiliation.

B

Field inspections and reconnaissance were conducted, to the extent possible, with ground vehicles. Inaccessible areas and private lands were inspected in fixed-wing aircraft and helicopter to obtain field verification of aerial photographic interpretation.

C

Long-term and cumulative effects and productivity would depend on the continued existence of the proposed project's facilities, or the continued use of the route as a utility corridor. It is mandated in the Federal Land Policy and Management Act of 1976 that corridor proliferation be minimized to the extent possible. BLM and USFS did not intend to establish a new corridor in rural and undeveloped lands. The intent is to consider EPE's request for right-of-way and to consider all reasonable and feasible alternatives.

all areas have some development that is preferable to concentrating the lines in one corridor. If alternative C is chosen, the last remaining area of Catron County without a major development will be gone, and this has been accomplished in less than 15 years.

Two goals are stated for planning requirements, with four being of equal impact in a comparison of Route C, the preferred alternative and Route E. Of the remaining six Route C has to be the least preferred.

First a route was needed to not affect the VLA and Routes A, B, & C do to varying degrees.

Second, maintenance of landscape character is preferred & yet neither the cumulative impact of a separate corridor or the visual impact on the Plains of San Augustine are supportive of choosing Route C, especially if a second line is to be added as stated.

Four and five address endangered species & cultural resources and since no studies have been done on the private land along Route C and since

D The VLA and its planned expansion are not affected by the proposed project. See comment letter #1.

E The purpose of the Environmental Impact Statement is to examine the impacts of the proposed action and its various alternatives. El Paso Electric does not plan a second transmission line. BLM and USFS did evaluate the alternatives for the potential of building a second transmission line in consideration of long-term planning and management objectives.

F It is acknowledged that no intensive field surveys were completed on the preferred route, nor will there be until after a decision is made on this project in the Record of Decision. The impact assessment for cultural resources was completed following a sample survey and agency-record searches, which were used together to develop a predictive model. The model, which included known sites, was the basis for predicting cultural resource impacts. All information regarding habitats for endangered species was mapped; this included areas of private, as well as federal or state lands. See the Map Volume and the technical reports for more detailed information.

LETTER #17 (CONT.)
COMMENTS

RESPONSES

F the preparers only received information concerning federal lands no decision could be made as to the effect of the powerline on the private lands and even some state lands.

G Seven was to designate the right of way as much as possible on public land, which would be route E, route C has the least amount.

H Eight was forest management and the question arises why should that take precedence over private & BLM land management and where are the facts to establish that fire hazard is greater along one route than the other.

I On Page 14 the statement discusses selection of a route to minimize impacts to threatened & endangered species and at 4-10, chart 1-1, there are no listed areas of bald eagle habitat and at 4-11 it is stated there are no known locations of legally protected species and at 4-15 bald eagles are not listed for route C. For the thirty years I have lived here the plains have been a wintering area for the eagles with as many as nine on a carcass within three miles of the proposed route.

G Each alternative was routed on public land to the degree possible.

H Consideration of the Forest Plan (USFS) and the Management Framework Plan (BLM), within the context of the EIS, are required by federal regulations. This document is a combined EIS and plan amendment to be incorporated into the BLM and USFS planning and management documents. The concerns and planning requirements for the USFS are somewhat different than BLM, state, county, and private concerns. It must be disclosed what the effects to the plans will be, and if those effects are significant. The USFS management policies do not take precedence over other public management policies, nor over private concern.

I It is acknowledged that this area, and much of southern New Mexico, is a wintering area for bald eagles. Refer to Chapter 5 and Appendix B.

LETTER #17 (CONT.)
COMMENTS

RESPONSES

- J [Again the information presented is incomplete and a decision has been made only on the impact on federal land and not on state and private and that is a violation of the Environmental Policy Act.
- K [Also on Page 1-4 designation of rights of way across a maximum of public land is preferred, which would be route E while route C has the second most private and second least Federal lands. As to impacts route E has the ~~less~~^{maximum} amount of impact only on timber management while Route C has a greater impact on the VLBA, development, scenic & CNST.
- L [2-1, the scoping process allowed no access to private interests until after all alternatives were established.
- M [2-2, in the discussions of meet, the no action alternative did not even discuss the already permitted 345 KV line from Greenlee to Deming, why it isn't being built, why the Palo Verde power isn't being used and if it was to be built first what affect it would have on the need for the proposed line.

- J Technical reports with additional, more site-specific resource information are available for public review at BLM and USFS offices. An equal level of data were gathered for all public and private lands. Impacts were determined based upon this equal level of resource data. The Record of Decision will result in a final route. No decision has yet been made.
- K The National Radio Astronomy Observatory is not concerned about the impacts to the VLBA site. Please refer to comment letter #1. Your comments regarding higher environmental impacts on Route C than Route E have been considered.
- L Initial corridors were identified in a regional environmental study (see Draft PA/EIS, Chapters 2 and 3). The public was asked to comment on all of these corridors, which exceeded 2,000 miles of alternatives. The public meetings were advertised on radio and in newspapers. Corridors were eliminated based upon public input, agency concern, and engineering considerations. No routing alternatives were established for detailed study until after the scoping process was complete. As explained in Chapters 2 and 3, additional alternatives were also added or modified throughout the planning process as a result of input from private citizens.
- Public opinion has been documented and utilized throughout the planning process in all of the scoping meetings, workshops and hearings to develop alternatives and preferences. As corridors were established, public input was incorporated, and the preferred alternative was identified based on that input and other criteria. Refer to Chapter 3, Public Participation and Coordination, for detailed information on the public involvement process.
- M This existing right-of-way was part of the project description for Alternative E. The EPE planning process, as represented to the federal agencies, appears to be no different than other utilities. The components of least cost, constructibility, reliability, schedule and contractual arrangements are used to determine a course of action to follow. EPE has done this analysis and proposes the Arizona Interconnection Project as a course of action. BLM and USFS have reviewed the Arizona Interconnection Project to the extent necessary to make a decision concerning granting a right-of-way. The construction schedule of Palo Verde has no bearing on this project.

LETTER #17 (CONT.)
COMMENTS

- N 2-5, A steering committee meeting was held on June 6, supposedly after several weeks of field reconnaissance. Yet in September, at the Reserve public meeting of 6 land owners present, comprising some 50 miles of powerline route, not one had been contacted personally or by any one in the field nor had they seen any one along the power line route doing any kind of survey.
- O 2-5 In the discussion of the sensitivity analysis not one reference is made to the cumulative impact of establishing a separate corridor.
- P 2-10 In discussion of visual impacts, it would seem arbitrary to have only a 4 mile corridor of study when even a 30 foot windmill tower is highly visible at six miles. By using the criteria of the impact statement, a reduction of the actual visual impact is accomplished & a distorted & untrue picture is given.
- Q 2-11 A summary of issues is given and Route C impacts the environment more than E in 6 of the 7 categories listed.
(1) Visual for VRM & VQO 24.7 miles for route C to only 13.5 for route E.

RESPONSES

- N In areas of no access, or on private lands, field reconnaissance was conducted by air as well as on the ground.
- O The environmental impacts described are the incremental impacts of each alternative. Specific resource impact locations are detailed in the Technical Reports (available for review at BLM and USFS offices).
- P Visibility is acknowledged to be very extended in the Plains of San Agustin. Refer to visual impact discussion in Chapter 5 of this document for a technical description of the visibility threshold and impact criteria.
- Q Please refer to Chapter 2 of this document for an expanded discussion of the issues.

LETTER #17 (CONT.)
COMMENTS

RESPONSES

Q

(2) Route E has by far the most public land while C has significantly more private and lacks only 3 miles of having the least public land.

(3) Route E uses the maximum amount of the existing corridor

(4) Route C has twice as much high impact lineage and significantly more moderate impact lineage as far as land use impacts and cultural impacts are concerned.

R

(5) Property values have to be impacted more by Route C since it has a larger amount of private land.

S

In rating the alternatives and selection of the preferred route the decision was arbitrary since insufficient field work was done, cumulative impacts were not addressed, and there is a demonstrated lack of knowledge since only information concerning federal lands is used in making the decision and even based on the information presented Route E is still the least environmentally damaging.

It is interesting to note also that Route C happens to be the cheapest and also spares the Forest Service & BLM from the most work.

R

While various studies of property value impacts have been conducted, there is no conclusive evidence to suggest that transmission lines reduce the value of adjacent properties. Some studies have shown no substantial decrease in value, while others have indicated property values to be depressed.

S

The WIRTH project team spent approximately 122 man days in the field, within the project area. This time does not include field time spent with the BLM and USFS representatives, agency contacts and public meetings. The incremental impacts of this project (e.g., the impact of Alternative E added to the existing environmental disturbance associated with the existing TEP corridor) are addressed in this document. Resources were inventoried and impacts were addressed, regardless of land jurisdiction or ownership.

LETTER #17 (CONT.)
COMMENTS

RESPONSES

T

In the discussion of visual resources in Chapter 4, the Augustine plains are rated Class B and yet in Chapter 5 they are declared to be unique in two separate places. My understanding of visual resource rating was that any unique feature was to be a Class A. management area and the statement does not treat the plains as such. This needs to be corrected before any decision is made on a final route.

U

On page 5-20 it states "a high visual impact will result from strong contrasts". The statement does not address this concern in relation to the powerlines effect on the plains. In the same paragraph is stated "when strong contrast visually describes an area where the scenic resource is considered to be outstanding, distinctive or above average" is used to determine visual impact, certainly the plains would qualify and yet in the charts & graphs this doesn't apply. Again a decision was made based on false assumptions & facts.

T

The Plains of San Agustin were rated as Class B for this project. This rating was supported by a professional visual resource panel which was assembled for this project. The panel consisted of landscape architects and visual resource specialists from BLM, USFS and WIRTH. It is true that the Plains are a unique geologic formation, but do not possess outstanding scenic characteristics to meet the criteria for a Class A landscape. Please refer to the Technical Report (available for review at BLM and USFS offices).

U

The visual resource analysis is a documented assessment of impacts that would result to sensitive viewers and to scenic resources. It is designed to distinguish the visual preference of one alternative over another. As a separate issue, and one that is responsive to the federal requirements, it will also describe how acceptable the visual change is to agency management policy.

The contrast of this project is not strong across the Plains. Contrast is not only the potential visibility of the line itself, but also other potential disruptions. It also measures the amount of ground disturbance for construction and maintenance access, and the amount of vegetation removal (e.g., removal of overstory trees to accommodate the corridor). Please refer to the Technical Report, Volume 3, for detailed methodology and results (available for review at BLM and USFS offices).

LETTER #17 (CONT.)
COMMENTS

In summation I believe the decision to be arbitrary because it goes against the planning requirements as stated, the issues involved don't support the conclusion, is based on incomplete information and the values assigned are incorrect.

I request that the preferred route be denied or that the least damaging route, Route E, be chosen.

Respectfully

Oliver Lee Jr.

RESPONSES

LETTER #18 COMMENTS

RICHARD H. MEADOW
48 ELM STREET
CANTON, MA 02021

6 February 1987

Juan Padilla
Bureau of Land Management
Las Cruces District Office
2800 Marquess Street
Las Cruces, NM 88005

Dear Mr. Padilla,

- A** I am writing to comment on the Arizona Interconnect Project Draft Environmental Impact Statement. I am aware of contents of this statement only because of the efforts of neighboring landowners. In spite of the statement on page 1 of Newsletter 3 (November 1986) that "Copies have been mailed to those landowners whose property will be crossed by Route C", I - a landowner whose property will be crossed by Route C - did NOT receive a copy of the Draft EIS.
- B** According to past replies to past comments on draft EIS, the BLM must assume that there is a need for a new power line and cannot judge the question of need, present or future. Using the same reasoning, the BLM cannot pass judgement on any matter other than the direct environmental impact of the power line in question and cannot presume to even consider the possible future need for another line in this or any other corridor (as, for example, is done on page 5 of Newsletter No. 3 and in the Draft EIS). Therefore, Route E cannot be rejected on the grounds that no expansion will be possible in the future; the matter is beyond the brief of the EIS. If it is clear that Route E creates the least environmental impact for the immediately proposed El Paso Electric power line, then accommodation for an hypothetical future Tucson Electric Power Company line or an hypothetical future El Paso Electric Company line can have no bearing on the acceptance or rejection of that route. Similarly, corporate relations between El Paso Electric and Tucson Electric Power cannot be considered by the BLM in evaluating corridors. If placing an additional line along Route E is deemed to provide least environmental impact and El Paso Electric and Tucson Electric Power cannot come to some agreement on the use of that corridor, that is the problem of those companies and not of the BLM.
- C** Use of Route E will clearly create less environmental impact than Route C. Route C will require 163 miles of new access roads, Route E only 10.3 miles of new access roads (Table 3-2). This is an enormously greater environmental impact for Route C, particularly given the fragile nature of the environment through which it passes. In particular, the proposed corridor of Route C in southern Socorro and northern Sierra counties is an area that until 15 years ago had been heavily overgrazed. Severe erosion resulted which has been mostly checked through careful land management policies developed by local landowners (including our family) in consultation with the BLM. Part of the policy has been strict

RESPONSES

- A** The statement in the newsletter was incorrect. A list of landowners, along the preferred route, was assembled by the BLM from the leasee files. Those individuals on the list received copies and were named in the Draft PA/EIS. Over 1,000 copies of this newsletter were sent out where it was stated how copies of the Draft could be obtained. A more complete list of landowners has been developed in the several months since the release of the Draft PA/EIS through extensive ownership file searches at the various county courthouses. Each individual on the list has been sent a copy of that newsletter and will be on the list for future newsletters. The Final PA/EIS will also be mailed to each landowner identified along the preferred route identified in this document. It is acknowledged that this list is up-to-date with the current records, and may be incomplete. No decision has yet been made on the final route.
- B** The BLM and USFS believe that it is in the best public interest to consider the potential needs. The criteria for potential expansion is not the sole basis for agency preference. Route E has not been rejected, nor has a final decision been made for the project. The BLM and USFS are concerned about multiple owners in one corridor from a management standpoint. If Route E were chosen in the final decision, it would be up to El Paso Electric to determine whether they could afford to construct the line or negotiate line crossings with TEP.
- C** Route E would require only a few miles of new roads to access the corridor; however, once in the corridor, because of the rugged terrain through much of the USFS lands, new spur roads to the tower sites would have to be constructed. These new roads are not identified in Table 3-2, but could be very substantial. If a tower is required every 1,000 to 1,500 feet, and new roads in rugged terrain are required to each tower site, it is possible that up to a half mile or more of new spur roads could be needed for each mile of transmission. This cannot be estimated with any accuracy without engineering the tower sites and the roads. However, on flatter terrain, such as in Routes C and D, the new access roads into the corridors would also provide construction access to the tower sites.
- It is true that the line would cross soils with high and moderate wind and water erosion potential; however, with proper mitigation the amount of disturbance expected with this project is expected to be minimal. Mitigation on private lands will be negotiated during right-of-way discussions. EPE will agree to provide and maintain locked gates of a mutually agreed type and location into private lands to prevent increased access by unauthorized vehicles.

LETTER #18 (CONT.)
COMMENTS

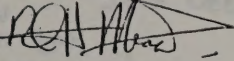
RESPONSES

C control of access to the area to minimize the damage of ORVs to the land surface. Any disturbance of the area by the construction of new access roads will cause massive erosion to begin once again because stabilization requires non-disturbance of a vegetation that is completely dependent for its growth on spotty and low rainfall. Thus you can reseed all you want, but if there is no rain, nothing will grow; if, however, there is too much precipitation at a given time, freshly seeded areas will wash out. As access roads already exist in Route E, direct environmental impact will be much less along that corridor than along Route C.

D The expressed reasons for choosing Route C over Routes D or E are of questionable validity. Steepness of terrain is only one factor in determining whether an area can be revegetated and stabilized; nature of the soil, bedrock, rainfall, native vegetation, customary land use, and other factors all have to be taken into consideration. Route C to my personal knowledge has some extremely rugged sections on it, particularly in the area of Iron Mountain which, in addition, has an extremely high incidence of lightning strikes due to its mineral content. Forest fires may be a potential hazard along Route E, but significant range fires have actually occurred in the path to be crossed by Route C within the past 5 years.

E For these reasons, the choice of Route C as the preferred alternative over Route E is highly questionable, the more so as both Gila and Apache Sitegraves National Forests indicate (pg. 3-12) that the entry Tuscon Electric Power corridor (Route E) is a preferable corridor.

Sincerely,



Richard H. Meadow
co-owner, Hutchison Ranch (Socorro County)

D The Cuchillo/Iron Mountain area is rough in some areas. There is existing access throughout most of the area, however. Erosion and rehabilitation of disturbed areas is acknowledged to be an important consideration in this area, and the mitigation will be negotiated during right-of-way discussions. Please see Chapter 2 for a discussion of fire hazards. As discussed, it is possible that the transmission line may actually act as a ground for potential lightning strikes. Range fires are less likely to have harmful implications to the operation of a transmission line than forest fires.

E The intent of the comment on page 3-12 is to state the USFS preference to study an alternative along the TEP corridor, rather than to study a new corridor in the Apache-Sitgreaves Forest in Arizona. This occurred during the scoping phase of the project. No alternatives were studied in detail through the Apache-Sitgreaves Forest.

LETTER #19
COMMENTS

RESPONSES

JOANNE V. HARDESTY, M.S.

Feb. 6, 1987

JAMES FOX
BLM
LAS CRUCES Dist. Office
1800 MARQUESS OFFICE
LAS CRUCES, NM 88005

DEAR MR. FOX,

I commented on the proposed El Paso Electric 345 kV Transmission LINE, ARIZONA INTERCONNECTION Project, at the meeting in Deming 1/15/87. At that time I stated that I did not see the need for this powerline. If the line had to be built, I suggested that Alternative Route E be chosen as the preferred route for the environmental consequences listed in the draft EIS.

HOWEVER, AFTER REVIEWING the draft EIS once again, I feel that the NO ACTION alternative is the ONLY logical plan. First, the need for this powerline is NOT JUSTIFIED. Why should New Mexico destroy the most beautiful area of our state to provide power to Texas? (80% of El Paso Electric goes to El Paso only). The southwestern portion of our state is, in my opinion, and the opinion of many others, the most scenic and splendid area of the whole Southwest. Any of the proposed routes through this area would irreversibly destroy pristine wildlife habitat. The idea of mitigation to "replace" this habitat is ludicrous. The animals are thriving now in the best habitat for them—where they are presently found. Riparian vegetation is the most sensitive vegetation type which would be affected. I do not want to see another powerline near either the

No response necessary.

LETTER #19 (CONT.)
COMMENTS

RESPONSES

Augustin are aesthetically spectacular, + I don't want to see a powerline mar their beauty. It is time for BLM + the National Forest Service to make an all out effort to preserve our public lands for raptors as well as all of the wildlife that survives on public lands. When the choice needs to be made for either preservation or destruction, it's time to choose preservation. Therefore I strongly urge the NO ACTION ALTERNATIVE For the ARIZONA INTERCONNECTION PROJECT,

Sincerely,
Janne Hardisty

COMMENTS
15 JUL 85

15 JUL 85

LETTER #20
COMMENTS

RESPONSES

Feb. 6, 1987

Mr. Juan Padilla
Bureau of Land Management
Las Cruces District Office
1800 Marquess St.
Las Cruces, N.M. 88005

Dear Mr. Padilla,

- A I am unable to understand why the Bureau of Land Management, with its mandate for conservation and land protection, should recommend acceptance of the proposed El Paso Transmission Line Route C over Route E. The Environmental Impact Study by WIRTH concludes that Route E has the least adverse impact of environmental resources of all seven routes studied (page 3-17). Route C passes through 210+ miles of unspoiled land, a part of which is the magnificent sweep of the Plains of San Agustin, and additionally requires 163 miles for access roads (Table 3-2).
- B There is in existence on Route E an unfilled transmission corridor which requires 10.3 miles of additional access roads only. Is the recommendation for Route C in accordance with land conservation and environmental protection? With the Congressional mandate restricting the proliferation of corridors?
- C We have opposed a new corridor since it was first publicly proposed because it seemed to be such an unnecessary abuse of unspoiled land. Now we are even more concerned as the very recent re-routing of C bi-sects our ranch, the Double Arrow, located north of Winston, N.M., in the Iron Mountain region. The terrain here is one of the most fragile in the entire State; the erosion damage would be irreversible. Practically, the proposed line would make the ranch impossible to run as a cattle operation. In co-operation with the BLM, we have spent a great deal of time, money and effort over the years in our attempts to protect the land and its wildlife. We would appreciate continued support from the BLM so that we may continue this practice.

Yours very truly,

Mary E. Meadow

Mary E. Meadow
Double Arrow Ranch
Winston, N.M. 87943

- A Route E would require only a few miles of new roads to access the corridor; however, once in the corridor, because of the rugged terrain through much of the USFS lands, new spur roads to the tower sites would have to be constructed. These new roads are not identified in Table 3-2, but could be very substantial. If a tower is required every 1,000 to 1,500 feet, and new roads in rugged terrain are required to each tower site, it is possible that up to a half mile or more of new spur roads could be needed for each mile of transmission. This cannot be estimated with any accuracy without engineering the tower sites and the roads. However, on flatter terrain, such as in Routes C and D, the new access roads into the corridors would also provide construction access to the tower sites.

In Chapter 3 (p. 3-18) and Table 3-2 of the Draft PA/EIS, it is stated that Alternative Route E, along with C and D, is one of the environmentally preferred alternatives, and is preferred by several of the individual environmental resource analyses. Routes C, D and E are all considered acceptable environmentally. The environmental resource data, however, is only one of the criteria for the preferred route as outlined by BLM and USFS in Chapter 3 (pp. 3-18 and 3-19) of the Draft PA/EIS. Other criteria stated include potential for rehabilitation, expansion and system reliability.

- B See response above, for consideration of access along Route E. Only portions of the TEP transmission line contains double-circuit towers. The double-circuit towers are for TEP future use. The process for consideration of a utility corridor is in accordance with the National Environmental Policy Act of 1969, the Federal Land Policy and Management Act of 1976, and other federal and state legislation.

- C It is acknowledged that the Cuchillo/Iron Mountain area has a very fragile soil which has experienced overgrazing and erosion. Erosion and rehabilitation of disturbed areas is acknowledged to be an important consideration in this area, and the mitigation will be negotiated during right-of-way discussions. With proper mitigation, the amount of disturbance with this project is expected to be minimal. Damages caused by operational conflicts are subject to negotiation.

LETTER #21 COMMENTS

February 6, 1987

Mr. H. James Fox
Bureau of Land Management
1800 Marquess Street
Las Cruces, New Mexico 88005

RE: Arizona Interconnection Project

Dear Mr. H. James Fox:

Enclosed you will find a map of the deeded lands we own in Luna County, NM, located 5 miles NE of Deming. I have participated from the initial announcement of the Arizona Interconnection Transmission Line Project to the present date.

A [POINT #1 - We did not receive Draft PA/EIS as we should have in November 1986. The first I saw of it was Wednesday, February 4, at the EPE meeting here in Deming. They kindly gave me a copy. Why didn't I receive a copy as my neighbor did? Is this an oversight or a conspiracy?

B [POINT #2 - Upon reading the Draft PA/EIS, I discovered that EPEC is calling for a modification in Route C-labeled Link #33 on Page 3-20. We are definitely opposed to this modification that will harm our property. We have agreed to allow a right-of-way to EPE adjacent to an existing 115 KV line and nowhere else. We will not allow the line in any other location. We prefer Link #36, adjacent to the existing 115 KV line.

If for some reason, EPE wants to move the line North in the Nutt, NM area, that is fine with me; but please don't disregard our wishes 20 miles to the Southwest.

As private property owners, we expect our wishes to be followed. This is not a Communist country! In our eyes it seems absolutely absurd to put this line one mile North of an existing line, thereby creating more damages to us and the general public. The scenic beauty of our lands will be gone. By starting another corridor, the public will also be affected as most people enter the Cookes Peake Recreation Areas through our lands, which have been bisected by previous power lines.

C [POINT #3 - I am begging you and your committee and the EPE representatives to come here to Deming on our property to view our situation in person. It would look very good to your superiors if you would show a personal interest in a

RESPONSES

A A newsletter announcing the release of the Draft, and specifying how to obtain a copy, was mailed to over 1,000 individuals and organizations. Your name is on the mailing list.

B The preference for Link 33 was stated by EPE. The BLM and USFS agree that paralleling the existing 115kV line is preferable.

C Based on your request, we did visit your property on February 10, 1987. Refer to letter #42.

LETTER #21 (CONT.)
COMMENTS

RESPONSES

2

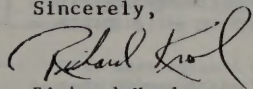
C

property owners unusual circumstances. I would like you to come and see for yourself what modification-Link #33 would mean to us and the devastating effect it would have on us--hard-working, law-abiding citizens.

Please come down here and let me take you on a personal tour. Please don't throw this letter in the trash. My phone number is 505-546-7434. I will gladly meet you anytime here in Deming and explain this situation to you personally within one hours time. I am also contacting Senator Domenici and Representative Skeen seeking their intervention in this matter.

Suggestion - You and EPE have scheduled a hearing in Silver City on February 10. Perhaps we could get together sometime that day or the following day.

Sincerely,



Richard Krol
P.O. Box 1751
Deming, NM 88030
Phone 505-546-7434

Enclosures

COMMENTS
FELIX 131

1075-04252

LETTER #22
COMMENTS

February 7, 1987

Juan Padilla
Bureau of Land Management
Las Cruces District Office
2800 Marquess Street
Las Cruces, NM 88005

FARR CATTLE CO.
DATIL, NEW MEXICO 87821

Dear Mr. Padilla:

- A [The PA/EIS for the Arizona Interconnection Transmission Line Project is in error, where the proposed routes cross land that we are familiar with, and no doubt, the same errors occur on land we do not know so well. The maps showing a proposed route on Farr Cattle Company ranch, omit 14 wind mills, some with up to 150,000 gallons of water storage, 8 earthen dams, 4 sets of corrals, graves, a cemetery, and no roads or pipelines are shown. This is negligence, and no doubt would affect anyone deciding on a route. Furthermore, there is no inventory of merchantable timber on privately owned land as there is on U.S. Forest land. This gives a bias view of the proposed line and is negligent.
- B [
- C [Approximately 10% of the proposed line would go through this ranch. Some 156 agencies and organizations were contacted or consulted regarding the proposed routes, but, in our case, we were given no choice as to the route through this ranch. In fact, an early proposed route was moved to more strategic parts of the ranch, so it now would run directly through two of our horse pastures. It would appear that we are being punished for some reason by routing the line where it might do the most harm to us.
- D [The PA/EIS mentions high altitude problems for a power line on proposed Route E, but no mention is made of the 7,700 feet plus, elevation on Route C where it parallels the Continental Divide.
- E [The public response preferred Route E.
- F [WIRTH Environmental Services stated less impact on the environment using Route E.

RESPONSES

- A Inventory maps included in the EIS Map Volume (Figures 4-5 and 4-6) illustrate major land uses within the study corridors. Range improvements, specifically stock tanks and corrals, are mapped only where the assumed right-of-way centerline would cross those features, since it is assumed that the operation of corrals or stock tanks located adjacent to the right-of-way would be unaffected by the project. In instances where a route would cross stock tanks or corrals, potential impacts would be mitigated by placing structures so as to avoid the feature, or allowing conductors to clearly span the feature in order to minimize disturbances (Mitigation Measure #8). Therefore, no residual impacts would result from crossing stock tanks or corrals.

Regarding the possible omission of features from the inventory, the level of accuracy achieved was equivalent for all study corridors. The land use inventory for the Arizona Interconnection EIS study was carried out using 1:40,000-scale aerial photography, USGS quadrangle maps, county highway maps, and other sources where available. Air and ground reconnaissance was used to verify the data obtained from maps and photographs. While there may be pipelines and roads located in the vicinity of the proposed and alternative routes, the land use inventory included only major utility transmission pipelines located within established rights-of-way and roads appearing on county highway maps. Locations of cemeteries were determined from aerial photography, but individual gravesites were not included in the land use inventory. A Class III cultural survey will identify gravesites along the selected alternative.

- B The addressing of the timber sales areas in the National Forests is a regulated consideration for determining the effects and the significance of effects to the outputs, goals and objectives of the Forest Plan. Damages to saleable timber on private land will be negotiated during right-of-way discussions.
- C Your input into the preference for alternatives and routing to avoid sensitive features during the scoping process and in the workshops and hearings has been considered. Damages and final location of the line on private land can be negotiated to minimize conflicts with ranch operation during right-of-way discussions.
- D There are no expected problems with the altitude at this location.
- E All public comments received have been considered.
- F Routes C, D and E are all considered acceptable environmentally. The environmental resource data are only one of the criteria for the preferred route as outlined by BLM and USFS in Chapter 3 (pp. 3-18 and 3-19) of the Draft PA/EIS. In addition to environmental considerations, other criteria stated include potential for rehabilitation, expansion, system reliability, and cost.

LETTER #22 (CONT.)
COMMENTS

Mr. Juan Padilla
Page two
February 7, 1987

- G [I see no mention of impairment of scenic value to Continental Divide WSA, if Route C is used. The BLM has given us permission to build a small amount of fence on the WSA if we conceal it in the brush. There is no comparison in the visual impact, yet the BLM would route a proposed power line adjacent to the WSA. This is not fair.
- H [Historically, once a power line is in, the access created by the construction is a never ending problem to the ranches it crosses. So we plead that the proposed Route E be used, and run the line on public land for the public benefit.
- I [To my knowledge it has not been proven that there is a need for this line.

Yours very truly,

Farr Cattle Company

By: 

David G. Farr

RESPONSES

- G None of the alternatives cross the boundary of the WSA. The Wilderness Act of 1964, and subsequent legal decisions, led to the BLM Wilderness Management Policy Guidelines of 1981, where it is stated that "no buffer zones will be created around wilderness areas to protect them from the influence of activities on adjacent lands. The fact that nonwilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area." It is recognized that buffer zones cannot be created around wilderness areas, and that the determination of visual impacts from the boundary of a wilderness area is specifically prohibited. Further, WSAs are being managed as wilderness areas until Congress acts on their designation.
- H EPE will agree to provide and maintain locked gates of a mutually agreed type and location into private lands to prohibit increased access, which may have an adverse impact on the private landowner or the environment.
- I EPE will be asked to prove the need for the project in hearings before the New Mexico Public Service Commission to obtain a Certificate of Convenience and Necessity.

LETTER #23
COMMENTS

RESPONSES

February 7, 1987

H. James Fox
District Manager
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Mr. Fox:

Thank you for the opportunity to comment on the draft Plan Amendment/Environmental Impact Statement on the proposed El Paso Electric 345kV Transmission Line.

I have the following comments on the draft:

- A 1) The draft does not demonstrate the need for or the necessity of the proposed undertaking. It does contain a general discussion of why the company and the Bureau consider the project desirable. The project is characterized in the draft as likely to increase El Paso Electric Company's competitiveness and to enhance its ability to meet energy demands which it forecasts. These justifications, however, beg the question of whether the project is in fact necessary. This issue will be dealt with before the New Mexico Public Service Commission.
- B 2) The draft states that various alternatives were eliminated on the basis of "public opposition" (p. S-3). The preferred alternative is one which was not eliminated despite stated public opposition, e.g. that of affected private landowners. There is no way, with the facts presented, to avoid the conclusion that the elimination of alternatives on this basis was an inherently unequal and prejudicial process. Please let me know how "public opposition" was weighed and how it was decided to eliminate alternatives as a result.

- A EPE will be asked to prove the need for the project in hearings before the New Mexico Public Service Commission to obtain a Certificate of Convenience and Necessity.
- B Your quote from the Draft PA/EIS was taken out of context. The draft states that "Alternative corridors were eliminated for a number of reasons, including environmental conflicts, public and agency opposition and system planning/performance criteria" (page S-3). As required in Section 1502.14, the environmental studies completed for this project and presented in the Draft PA/EIS and Final PA/EIS include all reasonable alternatives as well as those other alternatives which were eliminated from detailed study. The reasons for eliminating alternatives from detailed analysis are carefully documented in the regional studies (Arizona Interconnection Transmission Line Regional Environmental Study, July 1986).

LETTER #23 (CONT.) COMMENTS

H. James Fox
page two

- C** 3) The preferred alternative fails to meet at least two of the criteria stated on p. 1-3 of the draft, these being maintenance of landscape character and views, and minimizing disruption to grazing and livestock operations. The preferred alternative will adversely affect the largest viewshed on any alternative, i.e. the San Augustin Plains. Construction will also significantly affect livestock operations. As the draft states (p. 5-18) the preferred alternative involves the highest "displacement" (that is, destruction) of grazing lands among the seven alternatives presented.
- D** 4) The draft's assessment of existing and future land use, as summarized in Table 4-5 and illustrated in Figure 4-5, is based on incomplete information. It fails to account for numerous springs, livestock wells and pipelines on the preferred alternative. These features are not represented in the figure.
- E** 5) The draft does not identify any threatened or endangered species on the preferred alternative, although this alternative crosses a nesting and breeding area of the peregrine falcon, a federally-identified threatened and endangered raptor, in the vicinity of the Continental Divide.
- F** 6) As shown in Table 4-4, four alternatives affect less private land than does the preferred alternative. The preferred alternative has been selected by public land-managing agencies. It burdens individual landowners while lessening the adverse effect on and the continuing responsibility of the public agencies which chose it.

Thank you again for this opportunity to comment. Please provide a response to my specific question given in comment 2 above. I will also submit comments on the final document.

Sincerely,

Thomas Merlan
Thomas Merlan

RESPONSES

C It is recognized that significant residual impacts will result from construction of a transmission line, regardless of the route chosen. The grazing impacts are considered worst-case, and are expected to be less, considering mitigation that is committed to by EPE. Visual impacts to the Plains are described in the Draft, and the methodology further explained in this document (Chapter 5). With consideration for public comments and other criteria, Route D is the agency proposed route.

D Inventory maps included in the FIS Map Volume (Figures 4-5 and 4-6) illustrate major land uses within the study corridors. Range improvements, specifically stock tanks and corrals, are mapped only where the assumed right-of-way centerline would cross those features, since it is assumed that the operation of corrals or stock tanks located adjacent to the right-of-way would be unaffected by the project. In instances where a route would cross stock tanks or corrals, potential impacts would be mitigated by placing structures so as to avoid the feature, or allowing conductors to clearly span the feature in order to minimize disturbances (Mitigation Measure #8). Therefore, no residual impacts would result from crossing stock tanks or corrals.

Regarding the possible omission of features from the inventory, the level of accuracy achieved was equivalent for all study corridors. The land use inventory for the Arizona Interconnection EIS study was carried out using 1:40,000-scale aerial photography, USGS quadrangle maps, county highway maps, and other sources where available. Air and ground reconnaissance was used to verify the data obtained from maps and photographs. While there may be pipelines and roads located in the vicinity of the proposed and alternative routes, the land use inventory included only major utility transmission pipelines located within established rights-of-way and roads appearing on county highway maps. Locations of cemeteries were determined from aerial photography, but individual gravesites were not included in the land use inventory.

E The only areas identified by the U.S. Fish and Wildlife Service and the State of New Mexico Department of Game and Fish, that were of concern relative to peregrine falcons, occurred on Links 41 and 45 (Routes E, F and G). There were no peregrine falcon areas identified anywhere on Routes C and D. Dr. John P. Hubbard, New Mexico Game and Fish Department, has indicated that he feels most peregrine falcon observations in areas traversed by Routes C and D are actually misidentified prairie falcons which are relatively common in west-central New Mexico. The aerial photographic interpretation of the area traversed by Routes C and D indicates that the habitat involved is not ideal nesting habitat for peregrine falcons. Peregrines could occur in the area, however, during migration or in winter. If peregrine falcon nests are discovered in the area, EPE will avoid those habitats and cease construction in the area during nesting periods.

F Many issues were considered in the selection of the proposed alternative. Land status was only one of the items considered.



The Rio Grande Chapter of the Sierra Club

9 January 1987

Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Gentlemen:

A This letter constitutes the official response of the Rio Grande Chapter of the Sierra Club to the Arizona Interconnection Project Draft PA/EIS.

The Sierra Club is adamantly opposed to the creation of a new powerline corridor in an environmentally sensitive area, especially when an alternate route following existing corridors is available.

Adding another line parallel to existing lines is far less environmentally objectionable than a new line in a new corridor since it, adding to an existing corridor, exacerbates existing environmental impacts only fractionally. A new line in a new corridor puts a line where there was none before; all the environmental impacts are wholly new. Use of an existing corridor means that existing access to the corridor may be used in most cases whereas a new corridor necessitates construction of access and maintenance roads where there were none before. All environmental impacts addressed in the Draft PA/EIS are far less in the use of an existing corridor as compared to the use of a wholly new one. Numerically, the difference is not a factor of one of two, but easily at least a factor of ten and probably much more.

The Sierra Club recognizes Route E, which parallels existing lines for very nearly its whole length, as the only acceptable route for the EPE powerline since its environmental impacts are in reality so much less than those of any of the other alternative routes.

El Paso Electric Company's desire to have a completely separate powerline and route for reliability reasons does not justify the very much larger environmental impacts that would result from establishing a completely new powerline corridor. Route E satisfies all of EPE's other objectives. It will allow EPE to provide economical energy to its customers since it will reduce dependence on Oil and natural gas for electric generation by furnishing access to the economy energy market and provide for EPE's forecasted need for power by providing firm transmission capacity. Although the section of Route E from Red Hill to the Greenlee Substation would be at somewhat higher reliability risk as stated in the Draft PA/EIS, it appears that another line in TEP's corridor would benefit both power companies by increasing the number of remaining lines to share the load should one of the lines experience a failure. The existing natural gas fired plant in El Paso should be maintained for load sharing should the EPE link from Red Hill to the Greenlee Substation experience a failure. It should be noted that the Greenlee Substation provides an alternate tie point to the Arizona power grid.

In summary the Sierra Club rejects Route C, the preferred route selected in the Draft PA/EIS, and also Routes A, B, D, F AND G as environmentally unacceptable routings for the Arizona Interconnection Project powerline desired by El Paso Electric Co.

A Many issues are considered in determining an alternative to be selected. The routing alternatives parallel existing transmission or power line corridors where it is possible. This was one of the issues brought forth by the public during the scoping meetings and public workshops that were held. Please refer to Chapter 2 of this document for a detailed discussion on paralleling existing transmission lines.

LETTER #24 (CONT.)
COMMENTS

RESPONSES



The Rio Grande Chapter of the Sierra Club

- 2 -

The Sierra Club recommends Route E as the only environmentally acceptable route for the proposed powerline.

We appreciate the great effort expended in the preparation of the project's Draft PA/EIS and the opportunity to comment thereon.

Sincerely

James J. Jones, member
Executive Committee
Rio Grande Chapter, Sierra Club

301 1/2 Park St.
Socorro, NM 87801



The Rio Grande Chapter of the Sierra Club

COMMENTS
LETTER #24

These items were considered in the selection of the proposed alternative. I and others were only one of the items considered.

1983-01-02

LETTER #25
COMMENTS

RESPONSES

HARLOSA CATTLE COMPANY

H V L RANCH
CUCHILLO, NEW MEXICO
87932

FEBRUARY 9 1987

OFFICE:
1001 W. COMMERCE STREET
DALLAS, TEXAS 75208
214/741-1011

TOWNSHIP 10
RANGE 7 W

MR JUAN PADILLA
Bureau of Land Management
LAS CRUCES OFFICE
1800 MARQUESS
LAS CRUCES NEW MEXICO 88005

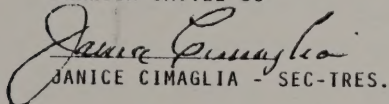
SCHEDULE:

AS LAND OWNERS IN SIERRA COUNTY TO BE TAKEN OVER
BY THE PROPOSED ARIZONA INTERCONNECTION TRANSMISSION
LINE, WE WISH TO PROTEST THIS PROJECT.

AS A MATTER OF RECORD, WE PROTEST AS OF THIS DATE
SHOULD THIS PROPOSED CORRIDOR INVOLVE ANY OF THE
LANDS BELONGING TO HARLOSA CATTLE CO - KNOWN AS
THE H V L RANCH

WE WILL RESORT TO ANY COUNTER MEASURES THAT ARE
AVAILABLE TO US UNDER THE LAWS OF NEW MEXICO.

HARLOSA CATTLE CO


JANICE CIMAGLIA - SEC-TRES.

No response necessary.

LETTER #26
COMMENTS

RESPONSES

Star Rt 2 Box26
Deming, New Mexico
February 9, 1987

Jim Fox, District Manager B.L.M.
Las Cruces B.L.M. Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Sir,

I am writing in regard to El Paso Electric Company's proposed 345 K. V. transmission line from Red Hill, New Mexico to Deming, New Mexico.

A I have reservations about the construction of the line at all, partially in view of El Paso Electric's promises of cheaper, more reliable electricity when they were seeking permission to build the line across southern New Mexico connecting the Palo Verde project to El Paso. Electricity costs to consumers have instead risen greatly and apparently the system doesn't have the previously suggested reliability or else there would be no need for the proposed line. The same suggestions of cheaper more reliable power are being made by E.P.E. in regard to the Arizona Interconnection Project.

B The areas whose land this ugly powerline will cross will not benefit directly in available electricity or even in the creation of jobs, as outside companies will be doing the construction. However, these concerned areas will have to suffer the adverse effects for years to come.

C I am especially concerned about the B.L.M. preferred alternative C. It appears to me that Alternative E which would follow existing corridors almost the entire distance is better. Since E.P.E. would be connecting into Tucson Electric Power Company's generating station, it would seem appropriate to run the new line in the existing T.E.P.C. corridor as far as possible and then get into E.P.E.'s existing corridor north west of Lordsburg. The proposed line would have fewer visual impacts when constructed adjacent to an existing line than it will have if constructed in a virgin area. Also fewer visual impacts will be associated with the mountainous terrain in alt. E as compared with allowing it to be built on open or flat areas such as characterizes much of alternative C.

D The Simulation photographs in the Map Volume of the Draft P.A. E.I.S. shows limited visual impact in the mountainous terrain.

E In the event that the no action alternative and alternative E are ignored in the final analysis, I wish to address the area between Deming and Nutt, N.M. currently in alternative C. Efforts should be made to avoid homes in the area but the line should be immediately adjacent to the existing 115 K.V. line along Highway 26, alternative 35. B.L.M. should require the use of a road currently along the right of way of the 115 K.V. line for access to build the

A The line across southern New Mexico is jointly owned by EPE, Texas-New Mexico Power Company, and Public Service Company of New Mexico. EPE's share of that circuit and the Arizona Interconnection Project will both be required to transport Palo Verde power to EPE.

B It is acknowledged that there would be significant residual environmental effects, including visual impacts, as a result of construction and operation of the proposed project.

C Visual impacts are only one issue considered in determining which route should be selected.

D The visual impacts are acknowledged to be lower on Route E, primarily because of parallelling the existing corridor for nearly its entire distance.

E The BLM and USFS preferred route parallels the existing 115kV transmission line as you suggest. The existing access roads will be utilized to the degree possible. There may be some overland access in this area to new tower sites.

LETTER #26 (CONT.)
COMMENTS

RESPONSES

2.

- E [proposed line and thus not disturb additional land. The location within a few feet of the current line would help reduce additional loss of value of other private land along the route. If it could not be built within a few feet of the 115K.V. line then it may be best to move west of Highway 26 to alternative 33.
- In summation, the no action alternative and alternative E should be given consideration in place of the preferred alternative C.

Sincerely

Joe Bill Nunn
Joe Bill Nunn

COMMENTS
FEB 1981

12/2/80

LETTER #27
COMMENTS

RESPONSES

216 S. Nickel
Deming, NM 88030
February 9, 1987

Juan Padilla
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

Dear Mr. Padilla:

I am writing to express an opinion on the building of the Arizona Interconnection Transmission Line by El Paso Electric Company.

On January 15, 1987, I attended a public hearing here in Deming and recommended Route E, the western environmentally preferred route. I did so because Route E parallels existing corridors of the Tucson line. After the meeting, a very informational question and answer period followed, and consequently, I have altered by opinion.

I strongly recommend the NO ACTION ALTERNATIVE. Advantages listed under this alternative in the EIS include no adverse environmental impacts and elimination of all costs. El Paso Electric claims that without the power line, reduction in oil and gas dependence would be impossible. I say that more research money and funding should be spend on solar and wind power and like, not nuclear energy.

New Mexicans do not want this beautiful state violated with another power line, when 80% of that energy benefits Texas customers. There is no environmentally preferred route, as far as many of us are concerned.

Sincerely,

Patricia K. Danser
Patricia K. Danser

No response necessary.

LETTER #28
COMMENTS

RESPONSES

P. O. Box 1162
Deming, N.M. 88031
February 9, 1987

Mr. Juan Padilla
Bureau of Land Management
Las Cruces District Office
Las Cruces, N.M. 88005

Dear Mr Padilla:

A [I am proposing a NO ACTION alternative for the proposed Arizona Interconnection Transmission Line because the environmental dangers to the high-density raptor nesting areas along Route C are too great.

Besides, the El Paso Electric Company prefers Route C because there's potential for adding another line in the future. And EPEC is already seeking a rate increase to pay for Unit II of Palo Verde, a nuclear generating plant in Arizona.

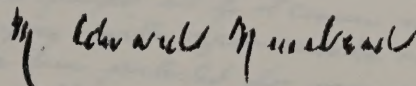
Can you imagine the additional costs to consumers brought on by the addition of another power line?

B [Why hasn't consideration been given to solar power, or wind power, for electricity? This is being done in other parts of the country.

Again, I'm proposing the NO ACTION alternative as best, with Route E as a last-ditch fallback position.

The EPEC officials at the recent Deming meeting did not answer financial and rate questions about the future to anyone's satisfaction.

Cordially,



M. Edward Neeselroad

A No agency identified high density raptor nesting areas are crossed. If nests of sensitive raptor species are encountered, EPE will avoid the area and cease construction during nesting periods; e.g., Swainson's hawk and ferruginous hawk.

B EPE has investigated and participated in the experimental development of numerous alternative generation sources including cogeneration, pumped hydroelectric, biomass and solar (including wind generation). Experimental projects include photovoltaic, solar repowering, solar pond, and wind mapping and wind electrical generation. Photovoltaics and the solar pond project, as experimental technologies, have proven to be successful. A solar repowering project was submitted to the Department of Energy for final design and testing, and was not accepted. The testing of wind generating projects are ongoing as experimental technologies. Also see Chapter 2 for additional information on alternative generation sources.

LETTER #29
COMMENTS

RESPONSES

February 9, 1987

G.S. Greer
P.O. Box 448
Truth or Consequences, New Mexico

Juan Padilla
Bureau of Land Management
Las Cruces District
1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Mr. Padilla:

I would like to voice my concern over the proposed construction of a new 345KV transmission line from Springerville, Arizona, to Deming, New Mexico, by El Paso Electric Company, creating a new corridor through the middle of New Mexico.

- A [As a cattleman using public lands for much of my operation, Route C will be displacing valuable grazing land which could be critical to my livelihood. With the passage of the Federal Land Policy and Management Act in 1976, Congress directed your Bureau "...to minimize adverse environmental impacts and the proliferation of separate rights-of-way, the utilization of rights-of-way in common shall be required to the extent practical....". The Environmental Impact Study conducted by Wirth of Phoenix has concluded that Route E along the Arizona-New Mexico border would displace the least amount of potential grazing land; and that Route C would displace the largest amount of potential livestock grazing per mile of transmission line. Therefore, I support the selection of Route E (the existing corridor) for the construction of the 345KV transmission line. If the Environmental Impact Study carries any weight at all, the choice of Route E is the only practical solution.
- B [

Thank you for your time.

Sincerely,

G.S. Greer

G.S. Greer

- A BLM is required to provide for utility corridors, as well as minimize environmental impacts. The BLM and USFS preference for Route C in the Draft PA/EIS meets the intent and requirements of the Federal Land Policy and Management Act.
- B Many issues were considered in the selection of the proposed alternative.

Jack L Roberts
Poverty Creek Ranch
Box 95
Winston, N.M. 87943
505-874-3580
Feb 9, 1987

Juan Padilla
Bureau of Land Management
Las Cruces District Office
1800 Marquess St
Las Cruces N.M. 88005

Dear Sir:

I have studied the Arizona Interconnection Project Draft recently. I had no idea that it was proposed for this area north and east of Winston N.M. (route C) until recently. I thought the shortest route would be used (route G)

A [I don't understand why the Bureau of Land Management, Forest Service, and the WIRTH Environmental Services, have the decision on this matter.

B [Seems as though the Private land owners should have equal representation. You have public comments which are a matter of policy but also ignore. Government Policies are now totally controlling private property.

C [What ever happens to this project and if it crosses my private lands I'm very unhappy with your roads and erosion, it may cause. It's been protected for many years and I'm going to see that it continues that way. I own this land and this is my livelihood and I wish to keep it that way.

Very truly
Jack L Roberts

A WIRTH Environmental Services is not involved in the decision-making process. WIRTH developed the EIS and provided other data gathering services to the USFS and BLM. Federal regulations provide equal opportunity.

B Every effort was made to contact the public during the scoping process and Draft PA/EIS preparation. Government policies and laws are there to protect the rights of all without giving unfair advantage to any one group.

C Erosion is not expected to be a major impact for this project, considering the mitigation that EPE has committed to, and that the BLM and USFS will require on public lands. Specific mitigation, including erosion control, access, locked gates to control access, etc., will be negotiated on private lands during right-of-way discussions.

LETTER #31
COMMENTS

RESPONSES

Truth Or Consequences, New Mexico 87901
February 8, 1987

Juan Padilla
Bureau of Land Management
Las Cruces District
1800 Marquess St.
Las Cruces, New Mexico 88005

Dear Mr. Padilla:

A

My late husband and I moved to New Mexico in 1940. We put together and improved a small but good little ranching unit in the Cuchillo Mountains by buying homesteads, and acquiring private, Federal, and State leases. This is a rough country with steep canyons and rugged ridges. While the Iron Mountain area is densely covered with timber, we had some good grama grass turf and we had a good home for our cattle. For years we took salt on pack mules to the various watering places. After we acquired a 4 wheel drive pick-up, we made very few primitive roads as we were afraid of erosion.

Surely you must know that in wet winters that ground freezes several feet deep and when it thaws, the soil puffs up and is loose. Heavy rains sometime start a wash in a cow trail or a rut. It is amazing to see how ditches wash out under natural forces.

We made our home in Havill Canyon until we retired and sold our ranch in 1975. Through all those 35 years we used various and sundry methods of erosion control.

Now I am thinking about the proposed route of the 345 KV Transmission line through that ranch and the damage it would do. Besides destroying the natural beauty and some grazing land, the amount of road building and the ensuing traffic involved to build such a project would be devastating by causing accelerated erosion in this fragile country.

It is my plea that you spare the degradation to this beautiful area and decide to put the transmission line on the proposed Route E where there is already an existing corridor.

Very truly yours,

Georgia Kirk Hutchison
(Mrs. N. T. HUTCHISON)

Box 208

Truth or Consequences, New Mexico

A

It is true that the line would cross soils in this area with high erosion potential; however, with the committed mitigation by EPE, the amount of disturbance with this project is expected to be minimal. Erosion and rehabilitation of disturbed areas is acknowledged to be an important consideration in this area, and the mitigation will be negotiated on private lands during right-of-way discussions. There is existing access throughout most of the Iron Mountain area, however, reducing significantly the amount of new road construction. EPE will agree to provide and maintain locked gates of a mutually agreed type and location into private lands to prevent increased access by unauthorized vehicles. It is acknowledged that there will be significant residual visual impacts resulting from the proposed action. The grazing effects are acknowledged but not considered significant.

LETTER #32
COMMENTS

RESPONSES

Feb 9, 1987

Dear Sir,

A [In regard to the 345 KV power line from Springerville to Deming. I think this is a very ill-advised project. If there is a corridor in place on the Eastern side of the Arizona line it should be used. The projected routes through Digitil and Winston will put extreme stress on the livestock, wildlife, vegetation and people along the route.

B [Why tear up new country when there is already a corridor? Protect the land as long as you can.

Sincerely,
Russell Freeman

- A It is acknowledged that there will be residual environmental impacts resulting from construction and operation of the proposed transmission line.
- B The routing alternatives parallel existing transmission or power line corridors where it is possible. This was one of the issues brought forth by the public during the scoping meetings and public workshops that were held. Please refer to Chapter 2 of this document for a detailed discussion on paralleling existing transmission lines.

LETTER #33
COMMENTS

RESPONSES

February 10, 1987

Mr. Larry Woodard, Director
Bureau of Land Management
P.O. Box 1449
Santa Fe, New Mexico 87504-1449

Dear Mr. Woodard:

The "Cover Sheet" prepared for the Arizona Interconnection Project - Plan Amendment/Environmental Impact Statement concludes with the statement:

"This Plan Amendment/Environmental Impact Statement (PA/EIS) assesses the environmental consequences of the federal approval for the project. Major impacts of the proposed action would be impacts of access roads, tower sites and staging areas on soils, springs, vegetation, wildlife and cultural resources, and the impacts of the transmission line itself on scenic resources and land uses, and for electromagnetic and health effects."

The comparison of routing alternatives beginning on page 3-15 of the Draft PA/EIS states on pages 3-17:

"Route E. TEP - Greenlee - Hidalgo - Luna Alternative . . . was identified as being the alignment that would result in the least disruption to environmental resources."

The pamphlet published in April 1984 entitled, "Obtaining a Right-of-Way on Public Lands, Bureau of Land Management Right-of-Way Program" states on page 4:

" . . . Congress through FLPMA directed BLM ' . . . to minimize adverse environmental impacts and the proliferation of separate rights-of-way, the utilization of rights-of-way in common shall be required to the extent practical' . . ."

Pages 3-19 of the Draft PA/EIS describes the existing Tucson Electric Power Company (TEP) corridor as follows:

"The corridor paralleled by Route E currently is occupied by one single circuit 345 kV line and a double circuit 345 kV structure with only one circuit installed and one 345 kV circuit position reserved for future use by TEP. A parallel line to the existing corridor would utilize the only remaining space capability left within the corridor. This creates two problems:

LETTER #33 (CONT.)
COMMENTS

RESPONSES

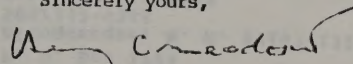
Mr. Larry Woodard
February 10, 1987
Page 2

1. Mixed ownership is not favored by either company.
2. TEP would be denied future expansion since the corridor would be fully allocated."

A The fact that neither company cares for "mixed ownership" does not seem to be a compelling reason for abandoning the corridor with "the least disruption to environmental resources", especially in view of the FLPMA directive concerning joint use of rights-of-way. Similarly, joint planning by the two utilities might result in use of the vacant circuit by EPE and joint planning, financing and construction of a new possibly two circuit line in the space still available in the present corridor. Such a solution would again make unnecessary tearing up a strip of New Mexico 214 miles long and the same length of spur and new access roads. In addition, an investment of between 33 and 37 millions of dollars could be postponed for considerable time with a constantly available option to construct a two circuit line either jointly with TEP or alone. Such an action would benefit customers of both EPE and TEP substantially.

Obviously neither the BLM nor other interested individuals or groups is in a position to tell EPE and/or TEP how to make the best and most economic use of the extant corridor. BLM is, however, in a position to suggest to the New Mexico Public Service Commission and to its Arizona counterpart that its inclination is to recommend the use of the existing TEP corridor and that substantial economies might result from a joint use plan now and in the future, with resulting savings to consumers. With construction cost information on the existing one and two circuit lines available, and operating costs on the two single circuits also available, the process of finding an optimal engineering solution and determining the financial outcomes of such a solution should not be a lengthy process. If either or both Commissions need expert technical assistance it would seem both right and proper for BLM to offer access to such expertise perhaps drawn from other agencies of the Department.

Sincerely yours,



Henry C. Meadow
Double Arrow Ranch
Winston, New Mexico 87943

cc: Those concerned

A EPE has planned this transmission line based upon internal planning criteria, including least cost, constructibility, reliability, schedule and contractual arrangements. There are some double circuit towers on portions of the existing TEP corridor, however they are owned by TEP and are reserved for their future use. EPE's purpose and need statement for the project is sufficient to grant a right-of-way. The need for the project will be determined in the hearing process for a Certificate of Convenience and Necessity before the Public Service Commission.

LETTER #34
COMMENTS

RESPONSES

P. O. Box 1724
Albuquerque, N. M. 87103-1724
505/242-0266
February 11, 1987

Mr. Juan Padilla, Realty Specialist
Bureau of Land Management
1800 Marquess
Las Cruces, N. M. 88005

Dear Mr. Padilla:

Re: Arizona Interconnection Project, Draft PA/EIS

Although the work effort included in this redone Draft PA/EIS appears to be of the highest quality, there are serious flaws in the preliminary stages, namely identification and study of technical alternatives.

First of all the Federal agencies should have approached this El Paso Electric (EPE) proposal with more than usual skepticism. EPE is holding substantially all the Federal and State environmental approvals required to build the second Greenlee-Hidalgo-Luna-El Paso 345 kV line, which would meet its same needs, and yet has instead applied to build a new Red Hill - Deming 345 kV line. Why? No technical studies are presented by EPE for changing its plans, nor is any check by outside Utility Regulatory and Power System Performance experts included by BLM in this Draft PA/EIS. In fact, EPE has filed information in response to Data Requests in its current New Mexico Public Service Commission Case #2044 that indicate the original proposal of a second Greenlee-Hidalgo-Luna-El Paso 345 kV line would still perform quite satisfactorily.

You can surely conclude from this Draft PA/EIS that such a second line, a portion of Route E, would be preferable to all the route alternatives studied, since on page 3-17 it states that even the full Route E has "the least disruption to environmental resources." EPE's reasons for not favoring this alternative are entirely unsupported.

Further EPE has no generation resources at Red Hill, N. M. and the study of alternatives should have been of transmission system alternatives between Palo Verde Nuclear Power Plant (50 miles west of Phoenix) and the El Paso area. Evaluation of this proposal should not have even been begun by the Federal agencies, since it is not the result of "least cost planning" nor of joint Arizona-New Mexico utilities planning efforts. Except for the possible exception of Tucson Electric Power Company, there is no evidence of participation in nor support for this transmission expansion plan by any of the other impacted utilities--Arizona Power Company, the Salt River Project, Plains Generating & Transmission Cooperative, Inc., Public Service Company of New Mexico, Texas-New Mexico Power Company or possibly other Arizona, New Mexico or Texas entities.

A The EPE planning process, as represented to the federal agencies, appears to be no different than other utilities. The components of least cost, constructibility, reliability, schedule and contractual arrangements are used to determine a course of action to follow. EPE has done this analysis and proposes the Arizona Interconnection Project as a course of action. BLM and USFS have reviewed the Arizona Interconnection Project to the extent necessary to make a decision concerning granting a right-of-way.

LETTER #34 (CONT.)
COMMENTS

RESPONSES

A By the way my credentials in summary are: 20 years' responsibility for the system planning function at Public Service Company of New Mexico (until 6/86) and participation in 6 or more Federal Environmental Impact Statements on major transmission line projects, including two of those referenced in Chapter 2.

The only reasonable action that the Bureau of Land Management and the Forest Service can take at this time, given this clear lack of justification for EPE's preferred alternative, is a Recommendation of "No Action."

Sincerely,

C David Bedford

C. David Bedford

cc: J. W. Whitney, BLM State Office

COMMENT?
FELIX 332

HEZLOH262

LETTER #35
COMMENTS

RESPONSES

P.O. Box 5
Monticello, N.M. 87439
Feb. 11, 1987

Mr. Juan Padilla
Bureau of Land Management
Las Cruces District Office
2800 Marquess Street
Las Cruces, N.M. 88005

Dear Mr. Juan Padilla:

Concerning the proposed new corridor
(Route C) for a 345kV transmission line
from Deming to Springville:

A [There's already an existing corridor so
why disturb more land, wildlife, and
other natural things for another one.

B [It's a public project - so use public
land - not private land.
Ranchers already have problems -
plus one more thing: - power line!
and no benefits.

Private land owners input:
Sincerely,
Adan Torres

A All alternatives considered were routed to the degree possible along existing transmission corridors. Route E would parallel an existing corridor for nearly its entire distance. In addition to consideration of the environmental impacts of each alternative, criteria for selection of Route C as the preferred alternative are outlined on pages 3-18 and 3-19 in the Draft PA/EIS.

B Routing on public land is discussed in Chapter 2 of this document. Each routing alternative maximized the amount of public land. Whenever there was a choice of crossing public or private land, the public land alternative was always taken.

LETTER #36 COMMENTS

3005 Calle Quieta
Santa Fe, NM 87505
February 11, 1987

H. James Fox, District Manager
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

Dear Jim;

Having read the Arizona Interconnectin Project Draft PA/EIS, I offer the following comments and concerns about the project. I was impressed by the map volume. Nice, glossy, classy looking documents, all 26 of them. They showed me every proposed link on the line. However, they did not show many of the features I am accustomed to using on plain land status maps. I would have liked to have seen one land status map showing the locations of each of the proposed routes.

- A I found it interesting that the entire Continental Divide WSA was not outlined on the maps, when the WSA is impacted by the proposed power line in several places. In fact the routes go through the area BLM has recommended suitable for wilderness designation. How are you planning to manage the Continental Divide Wilderness Area with the newly constructed power line? I can remember when members of your staff had problems with fences on WSA boundaries as being visual intrusions. What about the power line? I thought the boundaries for Eagle Peak and Mesita Blanca WSAs were much different in this document from the ones found in your wilderness documents. The Blue Range and Apache Kid Forest Service Wilderness Areas also seemed to have become much smaller in size, not to mention the new demensions of the Forest Service Semi-Primitive Areas. I found it difficult to determine the proposed construction
- B

RESPONSES

- A The boundaries of the WSAs and wilderness areas in the map volume are correct. None of the alternatives cross WSAs, wilderness areas, or semi-primitive areas. The Wilderness Act of 1964, and subsequent lawsuit decisions, led to the BLM Wilderness Management Policy Guidelines of 1981, where it is stated that "no buffer zones will be created around wilderness areas to protect them from the influence of activities on adjacent lands. The fact that nonwilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area." It is recognized that buffer zones cannot be created around wilderness areas, and that the determination of visual impacts from the boundary of a wilderness area is specifically prohibited. Further, WSAs are being managed as wilderness areas until Congress acts of their designation.

LETTER #36 (CONT.) COMMENTS

B location of the line, since too many identifying features and labels were missing on the maps. I did not find the maps useful. In fact I thought they were incomplete and misleading.

C When I was looking at the maps, I found the designation of rangeland/vacant. I think this designation is a contradiction of terms. Rangeland is certainly not vacant land. It is supporting cattle and many times wildlife as well. As the socioeconomic section pointed out, grazing is a major industry in that part of the state. I think that term, rangeland/vacant, may have biased my review of the draft PA/EIS. It made me think that whoever wrote the document sat in an office somewhere looking at all kinds of books, charts, reports and wrote only what they read and never, ever really looked at the land that was involved and the impacts on it.

D All the impacts of the access roads were not addressed in the document. The impacts of construction of additional access roads will be felt by domestic livestock and wildlife long after the powerline is built. Potential increase in Off-Road Vehicle (ORV) use is a given. Any type of road or trail attracts ORV users to test their skills or just go see the country. Not all ORV users are responsible. In fact, some have been known to chase cattle and/or wildlife. This is not good for either type of animal. All road construction impacts must be addressed. What will be done about the service roads

E if the power line is built in Continental Divide WSA recommended suitable for wilderness designation?

F I am still not convinced there is a real need to build the power line. It's nice not to be dependent on foreign oil and all that. However, with the depressed oil and gas economy in New Mexico, especially southeast New Mexico, that's near El Paso, it might be a real help to the State's economy, southeastern New Mexico's economy and solve El Paso's projected need problem, if some of the New Mexico oil and gas were used for power generation, instead of building a power line to import it from somewhere else. Just a thought.

RESPONSES

B The maps were provided as an aid to the reader to identify the location of environmental resources and the impacts associated with the various project alternatives. The scale of the maps makes it difficult to identify small features; however, they are accurate reproductions from USGS 7.5 minute quadrangle maps.

C The designation of rangeland/vacant is a land use term. By definition it means that there are no built land uses occurring (e.g., residences, urban areas, mining activities, etc.). Rather, it is rangeland. Other maps (e.g., biotic resources) do show other important features, resources, and habitats of the areas.

D The impacts of potential new access were factored into all environmental resources analyses for the Draft PA/EIS. Please refer to the Technical Reports for detailed inventory and impact assessment methodology (available for review at BLM and USFS offices). It is acknowledged that there may be an increased use of access into areas without previous access. Where possible, no roads will be built and overland access will be utilized. Private lands will have locked gates, at the owner's request, to control unauthorized vehicle access.

E There is no intent to construct a transmission line, or its required access roads, in a wilderness area or WSA. It is specifically prohibited by federal legislation, and would require an act of Congress.

F EPE will be asked to prove the need for the project in hearings before the New Mexico Public Service Commission to obtain a Certificate of Convenience and Necessity.

LETTER #36 (CONT.) COMMENTS

- G** [The document does not address, to my satisfaction, the impact of the powerline on the Very Large Array (VLA) telescope system located on the Plains of San Augustin. In fact, I think the document stated that the real impact was not known. Information in the PA/EIS implied that there would be an adverse impact on the VLA. I think this impact must be analyzed carefully and not dismissed because the Dusty location is not known.
- H** [In conclusion, I think the document did describe the proposed action from a construction viewpoint. It contained all kinds of diagrams and locations for construction of the power line. I do not think that it addressed the environmental impacts of the construction in any depth. As a draft Proposed Action (PA), one certainly could determine what was going to be built and where. However, as an Environmental Impact Statement (EIS), the document is incomplete in its analysis of impacts and misleading by omission of information that should have been available in the draft PA/EIS for public review and comment.
- I** [One last comment, I am assuming the route C is the proposed action. It's not clear from reading the document. The PA/EIS just states it's the route preferred by everyone. There is also very little mention of a no action alternative. This is the alternative I would prefer. Like I said before, I really don't see a need to build another power line.
- J** [One last question about an airstrip shown on map 4-5 North, that appears to be located close to Old Horse Springs. Old Horse Springs and New Horse Springs are not marked on map 4-5 North. I can't find the airstrip on my FAA charts. I would like to know if that airstrip is indeed located by Old Horse Springs? Thank you for this chance to comment on the PA/EIS.

RESPONSES

- G** The National Radio Astronomy Observatory is satisfied that the preferred alternative would not affect its present or planned operation of the VLA or the proposed VLBA site near Dusty. See comment letter #1.
- H** More detailed information as to the specific location of impacts and the resource analysis methodologies is located in the Technical Reports (available for review at BLM and USFS offices).
- I** Route C was the preferred alternative identified in the Draft PA/EIS. Please refer to Chapter 2 of this document for additional discussion of alternatives including the no action alternative, and identification of the proposed route.
- J** The private airstrip referenced was determined from aerial photographic interpretation and field checking. It is located near a residence west of Old Horse Springs.

Sincerely yours,

Judy Bishop

Judith S. Bishop

LETTER #36 (CONT.) COMMENTS

K P.S. Since I live in the northern part of the state I feel a bit left of the process. I was not able to attend any of the public meetings due to the long driving time involved. I also had to get my copy of the document from New Mexico's Department of Agriculture. I did not receive one in the mail, although I am on the mailing list for this project.

RESPONSES

K The newsletter you received at the release of the Draft explained how a copy of the document could be obtained.

LETTER #37
COMMENTS

RESPONSES



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

FEB 11 1987

H. James Fox
District Manager
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Mr. Fox:

In accordance with responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Region 6 office of the Environmental Protection Agency (EPA) has reviewed your Draft Environmental Impact Statement (EIS) on the proposed El Paso Electric 345kV Transmission Line, Arizona Interconnection Project.

The following comments are offered for consideration:

1. Air quality attainment designations found in 40 CFR 81.332 should be referenced in the air quality impacts discussion found on pages 4-3 and 5-4 of the EIS. We recommend that the standard dust mitigation procedures, such as continuous watering in construction areas, daily watering and/or use of chemical suppressants be addressed in the EIS.

2. The preservation and protection of existing riparian habitat is a natural resource concern of our agency and of the State of New Mexico. Therefore, minimum right-of-way clearing at stream crossings and vegetation feathering along the right-of-way edges should be implemented as mitigation features to protect these resources.

We classify your Draft EIS as Lack of Objection (LO). Specifically, we have no objections to the project as proposed. Our classification will be published in the Federal Register according to our responsibility to inform the public of our views on the proposed Federal actions, under Section 309 of the Clean Air Act.

A Your comments have been acknowledged and are included in this document (refer to Chapter 5).

LETTER #37 (CONT.)
COMMENTS

RESPONSES

-2-

We appreciate the opportunity to review the Draft EIS. Please send our office one copy of the Final EIS at the same time it is sent to the Office of Federal Activities, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

Sincerely yours,

Frances E. Phillips

✓ Frances E. Phillips
Acting Regional Administrator



COMM-102
FEB 1973

102-1022

Gopher Broke Farm
Feb 12, 1987

Sir:

I think that routes ABCDF and G are totally inappropriate for a power line that will basically benefit only stockholders in EPE and the Arizona power plant.

- A [This line should stay in Arizona entirely until it gets as far south as Lordsburg!
- B [The visual impact of Route C - which will pass just a mile or so west of my farm, is immeasurable due to the fact that there is an unimpeded clear view of the eastern part of the Gila National forest all along the interstate 25 from the Gila Natl. forest all the way to Hatch. It makes me sick to think that this will possibly become an interstate sacrifice area, just to keep the air conditioners and other electric doodles humming in E. P.

The creation of new transmission line corridor in New Mexico does not make sense in light of the reduced tourism appeal for the Rio Grande Valley. People from out of state can stay home and see scarred and abused wild areas - this is the land of enchantment and should be kept as such - once the new line is created you can be damn sure EPE will never

- A The alternative in Arizona was eliminated during the scoping process in favor of studying an alternative parallel to the existing TEP corridor. See Chapter 2 of the Draft PA/EIS.
- B The apparent size and potential visibility of this transmission line, at or beyond one mile, is such that a moderate visual impact could occur. Please refer to Chapter 5 for additional information regarding criteria for visibility threshold.

LETTER #38 (CONT.)
COMMENTS

RESPONSES

C

pay to have it removed, just as they will
relegon Palo Verde decommissioning costs.

Another issue bearing comment is the biological
resource impact of locating a line on Route 6.
As one of only a few nationally recognized
organic farms in the State of New Mexico,
Copper Broke Farm is unique in its location.
Away from industrial, chemical, and agricultural
pollution, we are committed to producing pure
whole earth foods. I sincerely believe the
positive ionization and other undocumented
low level radiation in such a high power
line so close by will have an adverse effect
on the biological diversity and harmony of my
home, my business, my health, my life.

In the grander scheme of industrial and real
estate development my protests are like pissing
into the wind to put out a forest fire. My only
consolation is that eventually we will all be held
accountable for our crimes against mother earth.

Sincerely,
Bill Bussmann
Copper Broke Farm
Box 89
Cataldo NM 87931

C Although numerous studies have been completed on this subject, there is no
conclusive evidence that there are any significant electrical effects from a
transmission line of this voltage.

LETTER #39
COMMENTS

Chuscoy
Feb. 12, 1987

Dear Mr. Padilla,

I am writing to protest the proposed route (A-C) of the Arizona Interconnection Transmission Line through Animas Canyon. I feel it will spoil the area. It certainly isn't going to enhance it. One of the reasons I chose to live in the canyon was the lack of such evidences of man's "progress."

A [I also think it will decrease the value of our property. I guess this is just one of the sacrifices we must pay for being "civilized."

I don't have any of the answers. Nor am I content to just say no in my backyard, because if it's not in mine then it's in somebody else's. I'm sure other people will feel as I do when it's their turn.

B [The point is - Does El Paso Electric really need this power line? What about their shares in Palo Verde?

In anycase I vote "No." By the way thanks for getting the information folder to us in ^{the} last week of Jan. when it should have been mailed to us in early Nov.!

Sincerely
Susan C. Bussmann

RESPONSES

A While various studies of property value impacts have been conducted there is no conclusive evidence to suggest that transmission lines reduce the value of adjacent properties. Some studies have shown no substantial decrease in value, while others have indicated property values to be depressed.

B EPE will be asked to prove the need for the project in hearings before the New Mexico Public Service Commission to obtain a Certificate of Convenience and Necessity. EPE does own a portion of PVNGS, which will also be interconnected into the Western System electrical grid.

LETTER #40 COMMENTS

RESPONSES

1987

February 12,

Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Gentlemen:

This letter is submitted as a comment on the Draft Plan Amendment/Environmental Impact Statement for the Arizona Interconnection Project for a 345 kV line to transport electrical power from plants near Springerville, New Mexico to El Paso, Texas. Please make this letter a part of the official record of the statement.

A [My first and primary comment is that the BLM has not given sufficient attention to the question of the need for the power line, nor has it weighed the need against the environmental impacts in determining the proposed action. Rather, the statement accepts the evaluation made by El Paso Electric concerning the proposed action and is concerned almost entirely with the question of route selection. This is contrary to requirements of NEPA, which requires that the impacts of the various proposed actions (not just alternative routes) be evaluated and used to arrive at the final proposed action.

B [Second, having accepted the proposed action by El Paso Electric, the statement identifies three routes of 'nearly equal' environmental impact (routes C, D, and E) but then ignores several key criteria for selection of a route (given on pages 1-3 and 1-4) to select the route desired by El Paso Electric. The selected route (route C) crosses land of great, unspoiled scenic beauty, whereas alternative route E follows the path of existing power lines along nearly all of its extent. Two of the three criteria upon which the selection was made (p. 3-19) were not environmental in nature, and one of the criteria, that the selected route allow for expansion, paves the way for even greater environmental degradation along the selected route. The logic of the EIS has been completely inverted; one of the primary reasons route E was not selected was because of the cumulative impact of multiple transmission lines, but route C is selected to allow further expansion along route E as well as along route C. The least environmental impact for a power line, if it is to be built, would be along the existing corridors of route E; this statement has not addressed the larger issues of the future need for power lines and their impacts.

C [The criteria given on pages 1-3 and 1-4 state that a route is to be selected that, among other things, will a) minimize the proliferation of separate rights-of-way, and b) be such as to not impair wilderness values. The selected route constitutes exactly the

A EPE will be asked to prove the need for the project in hearings before the New Mexico Public Service Commission to obtain a Certificate of Convenience and Necessity. EPE's purpose and need statement for the project is sufficient to grant a right-of-way. The impacts of the proposed action, the no-action, and other alternatives were evaluated as part of the Draft PA/EIS.

B The Environmental Preferred Route was identified in the Draft and in this document. The agency proposed alternative considers environmental consequences and other factors. The purpose of this PA/EIS is to address the environmental consequences of an alternative to the proposed action, as well as amend the agency plans as necessary. Although BLM and USFS have determined to consider potential future utility needs as a component of their decision criteria, the Draft PA/EIS and this document are intended to address the incremental effects of this project only.

C BLM is required to provide for utility corridors, as well as minimize environmental impacts. The Federal Land Policy and Management Act of 1976 states that the proliferation of separate rights-of-way should be, to the degree possible, minimized. The BLM and USFS preference meets the intent and the requirements of the legislation. The BLM and USFS do not believe that wilderness values would be impaired by selection of any of the other environmentally preferred alternatives.

LETTER #40 (CONT.)
COMMENTS

RESPONSES

Page 2

- C [kind of proliferation which was to be avoided, and does so across a largely unspoiled, open and scenic part of southwestern New Mexico.
- D [In addition, the selected route would impair the wilderness values of the Continental Divide Wilderness Study Area. It runs parallel to the northern boundary of the WSA about one mile away from the boundary. This area is geographically part of Pelona Mountain and has been proposed to be included in the Continental Divide Wilderness by the New Mexico BLM Wilderness Coalition. Maps showing the Coalition proposal have been submitted to the BLM in connection with the Draft EIS for the statewide WSA's.
- E [A third criteria in selecting a route was that it should 'maintain the landscape character, scenic areas, and views'. The selected route crosses some of the most scenic areas of the state, including the southern extent of the Plains of San Augustin and the open plains of the Winston-Chloride and Monticello areas. The scenic beauty of these areas is one of New Mexico's best resources; their long-term degradation is too great a price to pay for the benefits of the project.
- F [The primary purpose of this project is to make more power available to El Paso at an economical price. The price is not so economical when the environmental effects of the proposed transmission line are considered. The environmental costs are great and have not been adequately evaluated in the Draft EIS.

Sincerely,

Paul R. Krehbiel

Paul R. Krehbiel
705 Fitch
Socorro, N.M. 87801

- D The Wilderness Act of 1964, and subsequent legal decisions, led to the BLM Wilderness Management Policy Guidelines of 1981, where it is stated that "no buffer zones will be created around wilderness areas to protect them from the influence of activities on adjacent lands. The fact that nonwilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area." It is recognized that buffer zones cannot be created around wilderness areas, and that the determination of visual impacts from the boundary of a wilderness area is specifically prohibited. In some instances the "sights and sounds" from outside influences may actually heighten or increase the awareness and appreciation of an area's outstanding wilderness values, as in the Sandia Mountain example in New Mexico (House of Representatives report no. 95-540).
- E It is acknowledged that construction and operation of the proposed action would result in long-term adverse visual impacts to sensitive viewers and to scenic resources. See Figure 5-2 and Chapter 5 of the Draft PA/EIS.
- F The environmental impacts of the alternatives have been evaluated in Chapter 5 of the Draft PA/EIS. They are adequate to evaluate all alternatives equally.

LETTER #41 COMMENTS

RESPONSES

Monticello

As a concerned citizen of the community of ~~Monticello~~, the county of Sierra, and the state of New Mexico, I protest the proposed creation of a new electric transmission corridor by El Paso Electric Company (the Arizona Interconnection Transmission Line) through 210 miles of undisturbed New Mexico land.

I protest for the following reasons: #1. There is an existing corridor along the western New Mexico- Arizona border with room for the proposed 345KV transmission line which will provide electricity for the city of El Paso. #2. The construction of the line and access roads will cause greater erosion to some of the most fragile country within the State. #3. Endangered species would be threatened, as well as various forms of wildlife and scarce forms of vegetation. #4. Also, an Environmental Impact Study by WIRTH of Phoenix, Arizona, has concluded that the existing Western Route (designated as Route E on BLM maps) has the "least disruption to environmental resources."

A
B
C
D

- A The existing corridor is fully occupied. An additional corridor would have to be designated within which a right-of-way would be granted for a new transmission line.
- B The construction of the line and associated access roads will increase the erosion potential.
- C See Chapters 4 and 5 of the Draft PA/EIS for a discussion on potential effects to biological resources for all alternatives.
- D Route E is the environmentally preferred route of the western routes. Routes C and D are preferred of the eastern routes. All three of these routes are environmentally acceptable.

Abeyne Pittman Box 27 Monticello, N.M. 87939
 Kristeen Wiley Box 27 Monticello 87939
 Rosa Chavez Sen Del Monticello NM 87939
 Bob & Jean Berger Box 21 Monticello, NM 87939
 Lepha Moccie Box 56 Monticello, NM 87939
 Katharine M. Moccie Box 56 Monticello N.M. 87939
 Tommie L. Williams Box 32 Monticello, NM 87939
 Charlotte Pittman Box 25 Monticello NM 87939
 Scott Pittman Box 25 Monticello NM 87939
 Tommy Morrow Box 37 Monticello N.M. 87939
 Barbara Anne Morrow Box 37 Monticello, N.M. 87939
 Keith A. Coil Box 44 Monticello, N.M. 87939
 Walter J. Coil Box 44 Monticello, N.M. 87939
 Karen M. Chavez Box 7 Monticello NM 87939
 Frankie Sullivan Box 43 " " " "
 Frances A. Sullivan Box 43 Monticello, NM 87939

LETTER #42
COMMENTS

RESPONSES

February 14, 1987

Juan Padilla
Bureau of Land Management
Las Cruces District Office
2800 Marquess Street
Las Cruces, NM 88005

Jay Whitacre
El Paso Electric Company
P.O. Box 982
El Paso, Texas 79960

RE: Comments on Arizona Interconnection Project

Gentlemen:

I would like to thank you for meeting with me on February 10, 1987 and feel I have a better understanding of the two possible routes concerning the Krols.

No response necessary.

We, the Krol family, are basing our comments on two routes: Northern Route(Link #33 which does not cross our land) and Corridor Route(Link #36 adjacent to the existing 115 KV line).

We will not allow the line to cross our property in any location other than in the existing corridor(Link #36). There is no good reason to create a Northern Corridor across our property, unless EPE wishes to reduce the amount of right-of-way required from the Krols. If EPE desires to reduce the impact to our lands, they can surely place the line North of our property on state land. By avoiding us completely, whether due to economics or engineering reasons, EPE will have no opposition from us.

We have been considering all factors important to us in choosing which alternative to support. We feel the Corridor Route(Link #36 adjacent to the existing 115 KV line) should be chosen over the Northern Route for the following environmental reasons: (A) An additional service road would not have to be built. (B) An additional power corridor would not be needed. (C) Another eyesore would be encountered upon driving North to the Cooke's Peak Recreation Areas. (D) Views from the northern half of our property would be preserved.

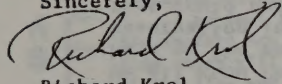
We all know the detrimental effects that a line of this magnitude will have on the environment, no matter where it is placed. We have one reservation in placing the line on our land. The major disadvantage that could possibly develop would be the failure on the part of EPE to negotiate a fair monetary settlement for the right-of-way and resulting damages. We have had two previous easement acquisitions with EPE. The first was a 4-year court battle reaching to the NM Supreme Court, and the second was an acceptable agreement reached when an acquisition expert was hired by EPE. EPE knows what they paid for the 1.25 mile easement, and if the adjacent corridor right-of-way is chosen, we would be expecting at least double that amount(as the right-of-way would be 2.5 miles in length).

From a monetary standpoint, EPE could rule out this location on Krol land and bypass our property by going North to the state land for the right-of-way. If for this reason EPE cannot or will not negotiate for a fair and just compensation to us, then we expect EPE to go North of our property.

LETTER #42 (CONT.) COMMENTS

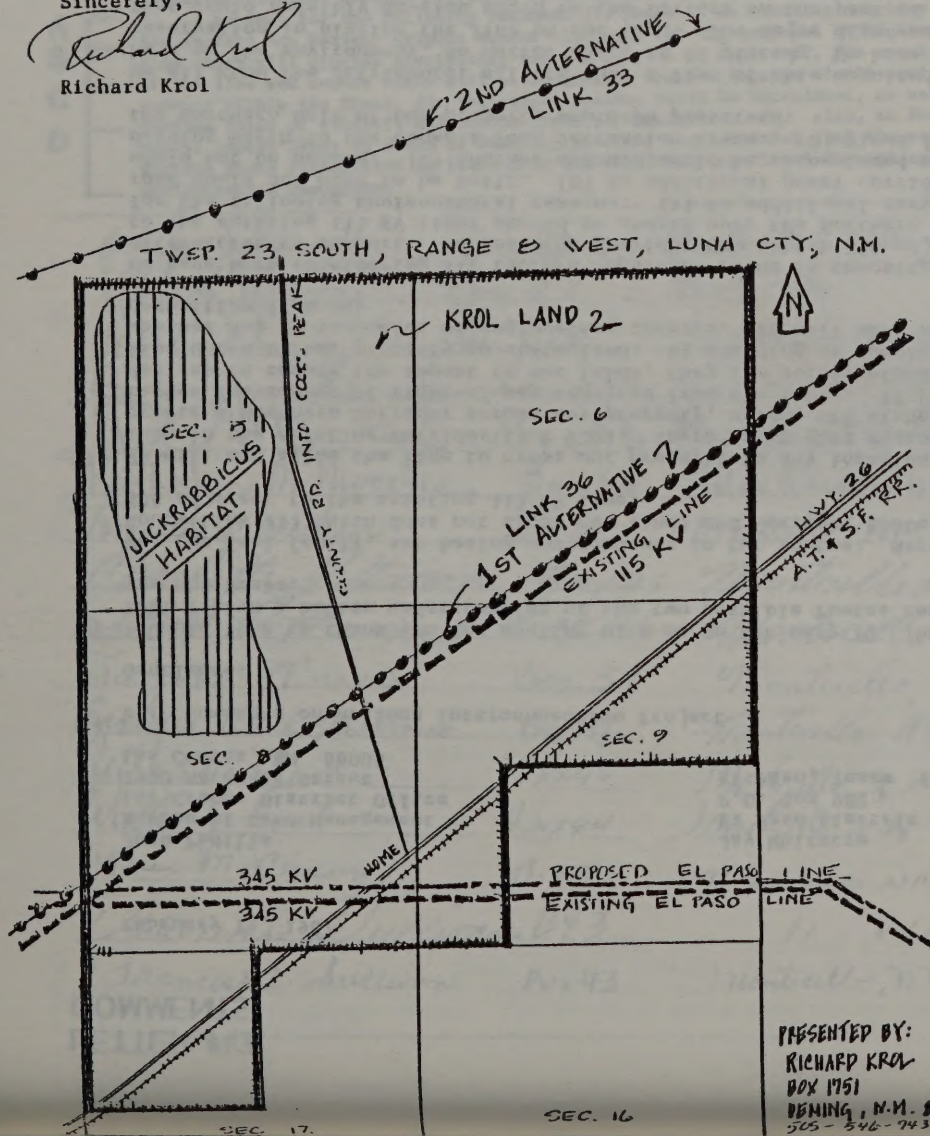
By choosing Link #36 (adjacent to the 115 KV line), we realize that we could be entangled in a legal battle if we cannot negotiate a just compensation from EPE. Nevertheless, we feel it is worth the risk of dealing with EPE to ultimately preserve the absolutely beautiful views of Cooke's Peak from the northern half of our property.

Sincerely,



Richard Krol

RESPONSES



PRESENTED BY:
RICHARD KROL
BOX 1751
DEMING, N.M. 88030
505-346-7434

LETTER #42 (CONT.)
COMMENTS

RESPONSES

3

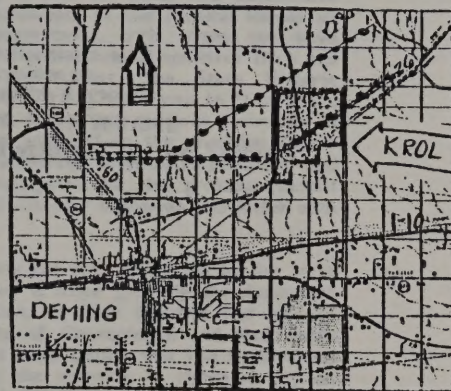
I WASN'T PLANNING ON BRINGING THIS UP, BUT DUE TO PRESSURE FROM THE RANCHING COMMUNITY, I FEEL I HAVE TO INFORM YOU THAT WE HAVE AN ENDANGERED SPECIES OF JACKRABBIT ON OUR LAND. THE UNIVERSITY OF NEW MEXICO HAS NAMED THEM —

"KROLUS NOLINUS JACKRABBICUS".

WE FEEL THAT IF THIS PROPOSED LINE CROSSES OUR PROPERTY, IT WILL HAVE A SEVERE EFFECT ON THEIR NATURAL HABITAT. WITH AN ADDITIONAL LINE OF THIS MAGNITUDE, THE ENERGY DISCHARGE OF CORONA CAUSES AGGRESSIVE BEHAVIOR IN THIS SPECIES, SUCH AS ATTACKING RATTLESNAKES, COYOTES, AND EVEN OCCASIONALLY CALVES. THESE LINES ALSO AFFECT THEM GENETICALLY — SOME OLDER MALES OF THE SPECIES WEIGH AS MUCH AS FORTY POUNDS. THROUGH AN EXTENSIVE BREEDING AND FEEDING PROGRAM, WE HAVE BEEN ABLE TO KEEP THEM CONFINED TO OUR PROPERTY. BUT WITH ANOTHER LINE, WE CANNOT PROMISE ANYTHING. PLEASE PLACE THIS LINE ALONG THE ADJACENT CORRIDOR, PLEASE!! , OR AMERICA WILL HOLD YOU RESPONSIBLE FOR THESE "KILLER RABBITS" INVADING THE ENTIRE SOUTHWEST.

I KNOW YOU WERE DISAPPOINTED THAT YOU COULD NOT GET A PHOTOGRAPH OF THE RABBITS ON FEBRUARY 10, BUT I THOUGHT YOU KNEW THEY CANNOT BE PHOTOGRAPHED THROUGH CUSTOMARY PHOTOGRAPHY. THE RADIO-ACTIVE CHARGE THEY CARRY TURN REGULAR SILVER-BASED FILM BLACK WHEN EXPOSED TO THE RABBITS. WE HAVE BEEN ASSURED BY THE U.S. ARMY LASER-PHOTOGRAPHIC COMMAND OF WHITE SANDS MISSILE RANGE THAT THEY WILL RELEASE SOME PHOTOGRAPHS THEY HAD TAKEN IN DECEMBER, AS SOON AS THEY ARE DE-CLASSIFIED BY WASHINGTON. AS SOON AS I RECEIVE THEM, I WILL SEE YOU GET COPIES.

Richard Krol



LETTER #43
COMMENTS

RESPONSES



United States Department of the Interior

NATIONAL PARK SERVICE

SOUTHWEST REGION

P.O. Box 728

Santa Fe, New Mexico 87501

IN REPLY REFER TO:

L7619(SWR-PE)

FEB 1..

Memorandum

To: District Manager, Las Cruces District, Bureau of Land Management,
Las Cruces, New Mexico

From: Associate Regional Director, Planning and Cultural Resources,
Southwest Region

Subject: Review of Draft Plan Amendment/Environmental Impact Statement on the
Proposed El Paso Electric 345 kV Transmission Line, Arizona
Interconnection Project, Arizona and New Mexico (DES 86/0043)

No response necessary.

We have reviewed the subject documents and find that they adequately address
the concerns of the National Park Service.

Eldon J. Reyes

LETTER #44
COMMENTS

RESPONSES



GARREY CARRUTHERS
GOVERNOR

STATE OF NEW MEXICO

DEPARTMENT OF
FINANCE AND ADMINISTRATION

OFFICE OF THE SECRETARY
WILLARD LEWIS

425 STATE CAPITOL
SANTA FE, N.M. 87503
TELEPHONE (505) 827-3060

February 12, 1987

Mr. H. James Fox
U.S. Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Subject: El Paso Electric 345 KV Transmission Line -
Arizona Interconnection Project - Plan Amendment / DEIS

Dear Mr. Fox:

The State of New Mexico has completed its review of the Draft Plan Amendment / Environmental Impact Statement for the proposed El Paso Electric 345kV Line - Arizona Interconnection Project. The document was reviewed by the New Mexico Natural Resources Department, the Game and Fish Department, the State Historic Preservation Office, the Department of Transportation, the Energy and Minerals Department, and the Environmental Improvement Division, only a few of which had substantive comments to submit. Attached are the comments of the Natural Resources Department and the Game and Fish Department, with whom you have already been working closely concerning the protection of sensitive flora and fauna, and the Energy and Minerals Department. The State Historic Preservation Office has also been working with you to finalize a Memorandum of Agreement for procedures to protect cultural resources in the final corridor selected. This agreement will include the provision that a 100 percent survey be completed in the preferred alternative corridor, and that cultural sites be avoided and/or mitigated to the greatest extent possible. The State Historic Preservation Office may follow-up this letter with more specific siting concerns.

The question of need for the power line was not fully addressed by the state agencies in their review, as this assessment is more properly the domain of the New Mexico Public Service Commission. El Paso Electric had already submitted an application for a Certificate of Convenience and Need with that Agency. We understand that the State Land Office will also be involved with you in a separate process regarding the granting of rights-of-way on state lands once a final corridor is selected. The Land Office has indicated to us that it does not perceive any significant resource or environmental conflicts on any state lands within corridors presently under consideration.

No response necessary.

LETTER #44 (CONT.)
COMMENTS

RESPONSES

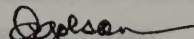
Mr. H. James Fox
February 12, 1987
Page 2

Overall, we commend your agency and Wirth and Associates for the effort expended in preparing this document. We especially appreciate the opportunity given to state agencies to become involved in the Environmental Impact Statement process very early, and believe that most of our major concerns were resolved during this coordination and consultation process.

The State does not have any strong recommended preferred alternative, although Route E is somewhat preferable from the wildlife protection standpoint. Route C (the USFS, BLM and EPE Preferred Alternative) would be acceptable, also, assuming all necessary mitigation and/or route alignment modifications are made.

If you have any questions, please contact the State Lead Agency Contact for this project, Sharon Murray, New Mexico Environmental Improvement Division, at 827-2839.

Sincerely,


Dean Olson
Director

Management and Program Analysis Division

Enc.

cc: Anne Cully, Natural Resources Department
Andy Sandoval, Department of Game and Fish
Tom Merlan, State Historic Preservation Officer
Fred Friedman, State Transportation Department
George Scudella, NM Energy and Minerals Department
Sharon Murray, NM Environmental Improvement Division
Keith Moheban, Public Service Commission
Jerry Stephens, State Land Office

DO:sgm

LETTER #45
COMMENTS

RESPONSES

State of New Mexico

GOVERNOR

GARREY CARRUTHERS



DIRECTOR AND SECRETARY
TO THE COMMISSION

HAROLD F. OLSON

DEPARTMENT OF GAME AND FISH

STATE CAPITAL
SANTA FE
87503

January 16, 1987

Ms. Sharon Murray
New Mexico Environmental Improvement Division
P. O. Box 968
Santa Fe, New Mexico 87504

Dear Sharon:

I have reviewed the draft Plan Amendment/Environmental Impact Statement (PA/EIS) on the proposed El Paso Electric 345 kV Transmission Line, Arizona Interconnection Project. My concerns were initially outlined in written correspondence to Mr. Jim Jensen, Project Manager, dated August 13, 1986. Inasmuch as the major areas of interest to my department are on wildlife and its habitat, I have confined my assessment of the PA/EIS to those subjects.

A [From a biological resource perspective, Route E (Tucson Electric Power Greenlee-Hidalgo-Luna Alternative) should be the preferred alternative. Fewer environmental consequences would result from parallelling the existing Tucson Electric Power (TEP) transmission line corridor. In my view, this is the most environmentally sound alternative since a greater percentage of the route traverses relatively insensitive habitat types that are likely to recover more rapidly from construction activities.

Following the comparison of the seven final routing options, Route E was identified in the PA/EIS as being the alignment that would result in the least disruption to environmental resources (page 3-17). This route would generally follow the existing TEP transmission corridor for its entire length except where engineering and land use constraints would preclude parallelling. On page 3-18, it is stated that "given the nearly equal environmental impacts shown for Routes C (the PA/EIS preferred alternative), D and E, the final decision was based on an analysis of additional factors

A Route E is preferred from a biological resource perspective.

LETTER #45 (CONT.)
COMMENTS

RESPONSES

Ms. Sharon Murray

-2-

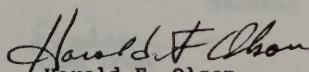
January 16, 1987

identified by the Bureau of Land Management and U. S. Forest Service. The decision criteria included rehabilitation, expansion, and system reliability.

- B The close proximity of Route C to critical bald eagle wintering habitat found at Patterson Lake (SE 1/4 S-9, T5S, R14W) is of concern. Overhead wires pose a serious threat to eagles in the form of collisions, especially during inclement weather and/or nighttime. The frequency of collisions with overhead wires is directly related to the proximity of power lines to roosting habitat and feeding areas. This highly sensitive area requires classification as an "Avoidance Area," and route modification may perhaps be warranted.

- B Although Alternative C is approximately two miles from Patterson Lake, there would be some residual hazard for raptor collisions. Please refer to Appendix B for additional information on bald eagles. It should be noted that Route D has been identified as the proposed route and is approximately three miles from Patterson Lake.

Sincerely,


Harold F. Olson
Director

AVS/mag

xc: John C. Peterson (Ecological Services, USFWS)
William H. Baltosser (Bio. Services Div. Chief, NMGF)
Dan Sutcliffe (Game Mgmt. Div. Chief, NMGF)

LETTER #46
COMMENTS

RESPONSES



NEW MEXICO NATURAL RESOURCES DEPARTMENT

Villagra Building / 408 Galisteo Street / Santa Fe, NM 87503 / 505-827-7835

GARREY CARRUTHERS
Governor

DR THOMAS G. BAHR
Cabinet Secretary
Natural Resources

RECEIVED
FEB 11 1987
EIS PROGRAM
SUPPORT BUREAU

February 2, 1987

Sharon Murray
Environmental Improvement Division
Health and Environment Department
Harold Runnels Building, 1190 St. Francis Dr.
Santa Fe, New Mexico 87503

Dear Sharon,

This letter is a response to the Draft PA/EIS on the Arizona Interconnection Project (November, 1986).

- A Our primary concern on this project is the potential for affecting rare, threatened, or endangered plant species along the transmission line corridors. All of the alternatives pass through areas where the potential for encountering rare plant species is high. While the draft fully acknowledges this, there is no indication that there was any on-the-ground survey for rare plant species or their habitats. We recommend that habitat for rare species should be located along the alternatives and the habitat surveyed for occurrences of rare plant species.

Sincerely,

Anne Cully
Anne Cully
Botanist

- A We agree that there are habitats for state-listed rare plants along the various alternatives. Once a decision has been made on final route selection, rare plant surveys will be conducted. Consultation with the BLM, in cooperation with the State of New Mexico, is proceeding.

LETTER #47
COMMENTS



GARREY CARRUTHERS
GOVERNOR

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

525 Camino de los Marquez
Santa Fe, New Mexico
87501

February 11, 1987

MEMORANDUM

TO: Sharon Murray, Environmental Improvement Division
FROM: Tom Devlin, Energy and Minerals Department *td*
SUBJECT: Comments on the Arizona Interconnection Project Draft PA/EIS

Thank you for providing the Energy and Minerals Department with the opportunity to comment on the Arizona Interconnection Project Draft PA/EIS. EMD has reviewed in particular that section of the Draft EIS regarding the purpose and need for the transmission facility.

A El Paso Electric Company suggests that the transmission facility will enable the company to diversify its resource base, provide greater access as both a buyer and seller to the wholesale economy market, and meet their forecasted need for power. EMD agrees that the Arizona Interconnection Project would accomplish these objectives. Furthermore, these objectives are consistent with traditional utility planning and, other considerations notwithstanding, would tend to support the rationale for EPE investing in this project at this time.

EMD is concerned with the potential impact that this \$35 million project will have on the company's ratepayers, particularly in light of the tremendous financial burden presently placed on the company as a result of the Palo Verde Nuclear Generating Station. However, EMD believes that such issues are more appropriately addressed in the Certificate of Convenience and Necessity Proceeding at the New Mexico Public Service Commission.

TD/vb

cc: George Scudella

RESPONSES

A This issue will be addressed in the hearings for the Certificate of Convenience and Necessity before the Public Service Commission.

LETTER #48
COMMENTS



GARREY CARRUTHERS
GOVERNOR

STATE OF NEW MEXICO
OFFICE OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

VILLA RIVERA, ROOM 101
228 EAST PALACE AVENUE
SANTA FE, NEW MEXICO 87503
(505) 827-8320

CLARA APODACA
CULTURAL AFFAIRS OFFICER

THOMAS W. MERLAN
DIRECTOR

February 12, 1987

Mr. H. James Fox
District Manager
Las Cruces District
Bureau of Land Management
1800 Marquess Street
Las Cruces, New Mexico 88005

Re: Draft Plan Amendment/Environmental Impact Statement on the Proposed
El Paso Electric 345kV Transmission Line, Arizona Interconnection Project

Dear Mr. Fox:

A At your request, I have reviewed the draft Plan Amendment/Environmental Impact Statement for the proposed El Paso Electric 345kV Transmission Line, Arizona Interconnection Project in order to determine the adequacy of the consideration given to significant cultural resources which may be affected by this undertaking.

It is my opinion that the efforts by Wirth Environmental Services to utilize existing cultural resource data, and to sample further segments of the proposed alternative routes, has provided a reasonable assessment of the relative impacts to cultural resources expected on each of the alternative routes. On the basis of the data presented, I agree with the conclusions of the draft EIS that Alternative Route E would probably result in the fewest impacts to significant cultural resources, and that any of the three western routes would be preferred to the eastern alternatives. I also agree with the conclusion that, of the proposed eastern alternatives, Routes C or D would be preferred, on the basis of expected impacts to cultural resources, to either Route A or B.

It is noted in the draft EIS that the difference between the "best" and "worst" alternative would probably mean that impacts to several tens more sites can be expected along the "worst" alternative. Since this prediction is not based on

RESPONSES

A El Paso Electric will prepare a work plan for further cultural resource studies in accordance with The Programmatic Memorandum of Agreement among BLM, the New Mexico State Historic Preservation Office, and the Advisory Council on Historic Preservation. This plan will also address studies on any National Forest lands that may be crossed, and U.S. Forest Service cultural resource specialists will be consulted as the plan is developed.

LETTER #48 (CONT.) COMMENTS

RESPONSES

Mr. H. James Fox
February 12, 1987
Page 2

A inventory data for any of the proposed alternatives, variation in the sensitivity projections makes it difficult to make any meaningful distinction among the several proposed alternatives. For example, since specific transmission line structure and access road locations are not yet known, it is possible that the more rugged terrain encountered on the western alternatives may make it more difficult to avoid impacts to sites, while avoidance of sites in the more open terrain traversed by eastern alternatives may allow greater flexibility to avoid sites, even though the number of significant sites may be higher on the eastern alternatives.

I believe that it is important to note that the cultural resource sensitivity projections have determined that it is highly unlikely that any prehistoric or historic resources which cannot be avoided, or which cannot be treated in a manner which will adequately mitigate adverse effects, will be encountered on any of the proposed alternatives. It is possible that such a site or sites will be identified during the inventory survey for which avoidance or data recovery will not result in adequate mitigation of adverse effects. However, I agree that, while it is not impossible, the probability of encountering such a site along any of the proposed alternatives is very low.

Only one site previously entered in the National Register is located in the vicinity of preferred Alternative Route C. This is Bat Cave, which may be indirectly affected by construction of the transmission line on Route C. Location of the transmission line three miles to the east and six miles to the north of Bat Cave may reduce but cannot eliminate visual impacts of the line on the environment of this site.

Further consideration of the effects of transmission line construction cannot be given until a Bureau of Land Management Class III inventory survey of all areas to be affected by land-disturbing activities on the selected alternative is completed as described in the draft EIS. Upon completion of the inventory, consultation on the significance of recorded cultural resources, and the effect of land-disturbing activities on those resources considered significant, can be completed in accordance with the Programmatic Memorandum of Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation and this office. As discussed in previous correspondence with the BLM, development of a work plan for meeting the requirements of this Memorandum of Agreement and compliance procedures discussed in the draft EIS will need to be completed when an alternative is selected. This work plan will stress site avoidance as the preferred means of ensuring that significant cultural resources will not be affected by transmission line construction. The plan should also discuss appropriate measures, such as data recovery, to be employed when avoidance of significant resources is not possible, and provide for a means to monitor cultural resource management activities to ensure that Section 106 compliance procedures are met.

Thank you for the opportunity to review the draft EIS for El Paso Electric's proposed Arizona Interconnection Project. I will look forward to consulting

LETTER #48 (CONT.)
COMMENTS

RESPONSES

Mr. H. James Fox
February 12, 1987
Page 3

A with the BLM on the work plan for this undertaking, and on the results of the several survey and mitigation efforts which will be required by this plan. Please contact this office with any questions you may have regarding my comments.

Sincerely,

Nancy E. Wood

Nancy E. Wood, Deputy
State Historic Preservation Officer

NEW:DER:bc

cc: A.E. Rogge
Stephen Fosberg
Sharon Murray

COMMENTS
RECEIVED

RECEIVED

LETTER #49
COMMENTS

RESPONSES

February 9, 1987

April L. Romero
Ray Romero
P.O. Box 2
Cuchillo, New Mexico 87932

Juan Padilla
Bureau of Land Management
Las Cruces District
1800 Farquess Street
Las Cruces, New Mexico 88005

Dear Mr. Padilla:

We would like to state our opposition to the construction of the El Paso Electric Company 345 KV transmission line through 210 miles of undisturbed New Mexico land.

A [In a letter to your bureau from Kerry Garrett, (dated January 21, 1987), Mr. Garrett makes a substantial case against granting a right-of-way to El Paso Electric for the construction of this line. He points out several areas along Route C where "serious environmental consequences would result that cannot be mitigated". Also, according to the Environmental Impact Study done by Wirth of Phoenix, there are "other more suitable alternatives available"; specifically Route E along the Arizona-New Mexico border.

B [As a BLM permittee the construction of such a line across our allotment would most definitely result in increased erosion and damage to extremely fragile topsoil even though El Paso Electric "promises" to disturb the land as little as possible. The Environmental Impact Study states that Route E would displace the least amount of potential grazing land and that Route C would displace the largest amount of potential grazing land per mile of transmission line. The selection of Route E (the existing corridor) is definitely the practical choice.

Also, enclosed with our letter are petitions signed by 110 persons in the northern half of Sierra County, who, when appraised of the facts wished to convey their opposition to the construction of this transmission line creating a new and unnecessary corridor through New Mexico.

Sincerely,

April L. Romero
Ray Romero
April L. Romero
Ray Romero

A Please see the response to Letter #6. It is not repeated here due to the length of the response.

B Erosion is acknowledged to be a concern along most of the alternative routes, particularly where there are steep slopes or rugged terrain. Past overgrazing has revealed the sensitivity of the soils to erosion. Appropriate mitigation, as outlined in the Draft PA/EIS, will reduce the potential impacts of erosion from construction or operation of the project. Erosion problems on private lands can be discussed during right-of-way negotiations.

LETTER #49 (CONT.)
COMMENTS

RESPONSES

As a concerned citizen of the community of Winston, the county of Sierra, and the state of New Mexico, I protest the proposed creation of a new electric transmission corridor by El Paso Electric Company (the Arizona Interconnection Transmission Line) through 210 miles of undisturbed New Mexico land.

I protest for the following reasons: #1. There is an existing corridor along the western New Mexico- Arizona border with room for the proposed 345KV transmission line which will provide electricity for the city of El Paso. #2. The construction of the line and access roads will cause greater erosion to some of the most fragile country within the State. #3. Endangered species would be threatened, as well as various forms of wildlife and scarce forms of vegetation. #4. Also, an Environmental Impact Study by WIRTH of Phoenix, Arizona, has concluded that the existing Western Route (designated as Route E on BLM maps) has the "least disruption to environmental resources."

1. Tanya Coburn, McCracken Ranch, Dusty, NM
2. Kay Henderson, Silsby St - Winston, NM 87943
3. M. Lee - 1, (Columb & Dusty, El Paso, NM 87943)
4. Billy Kelly, Winston, NM 87943
5. Clint Kelly, Winston, N. Mex
6. Roy Donnelly, Winston, New Mexico
7. Ann M. Munk, Winston, NM 87943
8. Wick Smith, Winston, NM 87943
9. Bea Howell, Winston, N. Mex 87943
10. Alvin Howell, Winston, N. Mex
11. Bonnie Sanett Box 80 Winston, N. Mex 87943
12. Kay M. Sanett Box 80 Winston, NM 87943
13. Gwynne, Box 117 Winston NM 87943
14. Shirley Doyle - Box 117 Winston NM 87943
15. Ray W. Bryant, Rural Delivery, Winston, NM 87943
16. Rose Williams, Box 114 Winston N. Mex 87943
17. Refugio PO Box 87 Winston NM 87943
18. John A. Brown, Richland, NM 87943
19. William Sullivan, Rail Road, Winston NM 87943
20. James Sullivan, Box 4 Ranch, Winston, NM 87943
21. David H. Picht, Bearhead, Magdalena NM 87821

LETTER #49 (CONT.)
COMMENTS

RESPONSES

22. April Simonson Chloride NM
23. Jack Fannon Winston NM.
24. Anna Lee Henderson Rusty NM
25. Ed Williams Box 114 Winston NM.
26. Ted Simonson Chloride Rt. Winston NM.
27. Conrad Lynn Chloride Rt Box 9 Winston N. Mex 87943
28. Widya Mikel Winston NM P.O. Box 82 Winston NM
29. Lisa DeRosier Rt 1 Chloride Winston, NM 87943
30. Lynn Miller Chloride Rt. Winston, NM 87943
31. Ray E Miller Chloride Rt. Winston NM. 87943
32. Conrad T. Lynn P.O. Box 112 Winston. NM. 87943
33. Ernest M. Burt P.O. Box 104 WINSTON NM. 87943
34. Wally Z. Frazier Box 87 Winston NM 87943
35. Ron Borden P.O. Box 118 Winston NM 87943
36. Walt Schmiediger - WINSTON, NM, 87943
37. Paul M. Luna Chloride R. Winston NM. Mex
38. John Riley Sen Shel Winston NM Mex 87943
39. Henry Riley Sen Shel Winston NM Mex 87943
40. Edna Farrell Marys Ranch Winston NM. 87943
41. Walter P. Hill ind. Bldg 14 WINSTON NM 87943
42. Jack L. Roberts Box 95 Winston NM 87943
43. Mary C. Roberts Box 95 Winston NM. 87943
44. Wm. C. Mendenhall Double Crown Ranch Winston, NM 87943
45. Richard L. Mendenhall P.O. Box 97 Winston NM. 87943
46. Herling M. Carter Box 97 Winston NM. 87943
47. Judith A. Carter Box 97 Winston NM. 87943
48. Frank J. Padden Box 91 Winston NM 87943
49. Edward J. Padden Box 91 Winston NM. 87943
50. Richard J. Padden Box 91 Winston NM 87943
51. Richard J. Padden Winston NM 87943
52. Wm. Edmund Chloride Route Winston NM 87943

LETTER #49 (CONT.)
COMMENTS

RESPONSES

As a concerned citizen of the community of Winston, the county of Sierra, and the state of New Mexico, I protest the proposed creation of a new electric transmission corridor by El Paso Electric Company (the Arizona Interconnection Transmission Line) through 210 miles of undisturbed New Mexico land.

I protest for the following reasons: #1. There is an existing corridor along the western New Mexico- Arizona border with room for the proposed 345KV transmission line which will provide electricity for the city of El Paso. #2. The construction of the line and access roads will cause greater erosion to some of the most fragile country within the State. #3. Endangered species would be threatened, as well as various forms of wildlife and scarce forms of vegetation. #4. Also, an Environmental Impact Study by WIRTH of Phoenix, Arizona, has concluded that the existing Western Route (designated as Route E on BLM maps) has the "least disruption to environmental resources."

1. Pat M. McCluskey SKV BAND RANCH - WINSTON NEW MEXICO
2. Mary E. Weadon Double Arrow Ranch - Winston N.M.
3. Dolores Ortega Box 81 Winston N.M. 87943
4. Nick Ortega Box 81 Winston N.M. 87943
5. Elsie Luna Chloride R.T. Box 9 Winston N.M. 87943
6. Wm F. Johnson Wahno Ranch Winston N.M. 87943
7. Russell Freeman Box 77 Winston N.M. 87943
8. Fred Freeman Box 77 Winston N.M. 87943
9. Tom Bennett Box 80 Winston N.M. 87943
10. Gene Elliott Box 80 Winston N.M. 87943
11. Gene Henderson P.O. Box 104 Winston N.M. 87943
12. Gene Bass P.O. Box 104 Winston N.M. 87943
13. Gene Bass P.O. Box 104 Winston N.M. 87943
14. Thomas R. Ball P.O. Box 104 Winston N.M. 87943
15. Kelly Shreckland P.O. Box 1 Chloride V.M. 87943
16. Gene C. Luna Chloride R.T. Box 9 Winston N.M. 87943
17. Gene C. Luna Box 9 Winston N.M. 87943
18. Gene C. Luna Box 9 Winston N.M. 87943
19. Gene C. Luna Box 9 Winston N.M. 87943
20. Gene C. Luna Box 9 Winston N.M. 87943
21. Gene C. Luna Box 9 Winston N.M. 87943
22. Gene C. Luna Box 9 Winston N.M. 87943
23. Gene C. Luna Box 9 Winston N.M. 87943
24. Gene C. Luna Box 9 Winston N.M. 87943

LETTER #49 (CONT.)
COMMENTS

RESPONSES

As a concerned citizen of the community of Cuchillo, the county of Sierra, and the state of New Mexico, I protest the proposed creation of a new electric transmission corridor by El Paso Electric Company (the Arizona Interconnection Transmission Line) through 210 miles of undisturbed New Mexico land.

I protest for the following reasons: #1. There is an existing corridor along the western New Mexico-Arizona border with room for the proposed 345KV transmission line which will provide electricity for the city of El Paso. #2. The construction of the line and access roads will cause greater erosion to some of the most fragile country within the state. #3. Endangered species would be threatened, as well as various forms of wildlife and scarce forms of vegetation. #4. Also, an Environmental Impact Study by WIRTH of Phoenix, Arizona, has concluded that the existing Western Route (designated as Route E on BLM maps) has the "least disruption to environmental resources."

- 1.----- Jay Tucker Kari Tucker
2. Luis Payillo Winston N. Mex
3. Jimmy Robbins Cuchillo, N.M.
4. Eugene Jones Cuchillo N.M.
5. Eagle Jones Cuchillo, N.M.
6. Eugene Brakes Cuchillo, N.M.
7. Nellie Brakes Cuchillo, N.M.
8. Kelly Underwood Cuchillo N.M.
9. Andy Underwood Cuchillo N.M.
10. Art D. Brakes Cuchillo N.M.
11. Jesus M. Apodaca Cuchillo, N.M.
12. Vergie M. McNew Box 1 Cuchillo N.M.
13. Johnny Ogden Box C Cuchillo N.M.
14. Jerry Robbins Cuchillo N.M.
15. Sylvia Robbins Cuchillo N.M.
16. Chris Nobles Cuchillo N.M.
17. Marvin J. Keller Cuchillo N.M.
18. Mary Tucker
19. Steve Payillo Torc
20. Theresa Underwood Cuchillo N.M.
21. William J. Underwood Cuchillo N.M.
22. Lynn F. Orr Cuchillo N.M.

LETTER #49 (CONT.)
COMMENTS

RESPONSES

23. Frank & Burna Cuchillo N.M.
24. Jewel Westphal Cuchillo N.M.
25. Hermila Reynoso Cuchillo N.M.
26. Roy Westphal Cuchillo N.M.
27. John P. Brown Cuchillo N.M.
28. E. R. Durrell Cuchillo, N.M.
29. Dorothy Hurnell Cuchillo N.M.
30. Jeanie Anglin Cuchillo N.M.
31. _____

25. Mrs. N. J. Hutchison (Former Resident) Box 208 Tractor Concession, N.M. 87901
26. Mrs. Esther Nordling Box 684 - Williamsburg - N.M. 87942
27. Mrs. Carl Nordling Box 684 Williamsburg N.M. 87942
28. _____

LETTER #50
COMMENTS

Feb. 9, 1987

Mrs Juan Padilla

A As a Native New Mexican, we are ~~are~~ apposed to the proposed El Paso Electric transmission line passing through the Cuchillo Mountains North of Winston (especially through Chiy) from Deming to Springerville Arizona since its for El Paso's purpose and destroying Vergerie land.

① for one thing its serving us no purpose

B ② Another would be taking the ranchers a significant amount of their grazing land and destroying own springs.

C ③ the erosion of the land caused by the construction of the transmission line

D ④ reducing the ranch owners the ability to control their land.

We feel Route E would be the best alternative to be considered

① for less miles

② less cost on transmission line.

Dolores Ortega

RESPONSES

A See the purpose and need statement on page S-1 of this document.

B The amount of grazing land disturbed is not expected to be significant. Please refer to Chapter 4 of the Draft PA/EIS and Chapter 2 of this document for a discussion of this issue. A spring inventory was completed as an integral component of the environmental studies. Locations of springs were avoided, and no significant adverse impacts are expected from construction (including potential blasting). Please refer to Chapter 5 of the Draft PA/EIS and the technical reports (available for review at BLM and USFS offices) for a discussion of the effects of potential blasting and construction activities on springs.

C Erosion is acknowledged to be a concern along most of the alternative routes, particularly where there are steep slopes or rugged terrain. Past overgrazing has revealed the sensitivity of the soils to erosion. Appropriate mitigation, as outlined in the Draft PA/EIS, will reduce the potential impacts of erosion from construction or operation of the project. Erosion problems on private lands can be discussed during right-of-way negotiations.

D Locked gates of an agreed upon type will be provided to private landowners to help prevent the illegal entry onto private lands along the transmission line right-of-way.

LETTER #51 COMMENTS

RESPONSES



United States
Department of
Agriculture

Forest
Service

Southwestern
Region

517 Gold Avenue SW.
Albuquerque, NM 87102

Reply To: 1950

Date: FEB 26 1987

Jim Jensen
Wirth Environmental Services
7500 N. Dreamy Draw Drive, Suite 145
Phoenix, AZ 85020

Dear Mr. Jensen:

My staff has reviewed your suggested changes for the final EIS related to the Arizona Interconnection Project. The changes are acceptable. We wish to thank you for your responsive concern to our original review comments.

By copy of this letter, I will notify the BLM and Gila National Forest of our concurrence with your recommended changes.

Sincerely,

John W. Russell
JOHN W. RUSSELL
Director of Land
Management Planning

cc:
Forest Supervisor, Gila NF
Art Maynard, RO Recreation
Juan Padilla, Las Cruces BLM Office



TABLE 4-1
ARIZONA INTERCONNECTION TRANSMISSION PROJECT
SUMMARY OF PUBLIC HEARING COMMENTS AND
AGENCY RESPONSES ON DRAFT ENVIRONMENTAL IMPACT STATEMENT

Comment Number	From	Issue/Concern	Response
Reserve			
R1	Dave Farr	<p>A. One hundred and fifty-six organizations were contacted for information. Why weren't land-owners contacted in a similar manner?</p> <p>B. Concerned about impact of dust from construction activity.</p> <p>C. Suggests transmission line route utilizes more public land.</p>	<p>A. In the course of preparing this document, formal and informal efforts were made to involve the public in the planning and environmental process. The requirements of public involvement mandated by regulations were strictly complied with. In addition to the agencies' required efforts, numerous other actions were taken by WIRTH and EPE to involve and inform the public. Please refer to the Public Participation and Coordination section (Chapter 3) of this document.</p> <p>B. Transmission line construction will cause temporary increases in suspended dust particles; however, dust would be controlled through use of standard construction dust mitigation measures to be negotiated on private land during right-of-way discussions. We do not believe that air quality impacts will be significant.</p> <p>C. The planning process described in the draft PA/EIS has located all alternative routes on public lands to the maximum degree possible within environmental and engineering constraints. Where there was a choice of crossing public or private land, the private land was always given priority for avoidance.</p>

Table 4-1 (continued)
Summary of Public Hearing Comments/Agency Responses

Comment Number	From	Issue/Concern	Response
Truth or Consequences			
T1	Harvey Chatfield	A. Requests BLM and others to minimize damage to BLM permits and private land.	A. BLM and USFS will require mitigation to minimize environmental impacts from the proposed transmission line project. Specific mitigation will be negotiated on private lands during the right-of-way discussions.
T2	Henry Meadow	A. Recommends utilizing the existing utility corridors in favor of opening new country.	A. Your comment has been noted and considered.
T3	Wayne Pitman	A. Concerned that new corridor will eventually contain more transmission lines.	A. A second or larger transmission line is not part of the proposal, nor is it planned. One of the "decision criteria" applied by the BLM and USFS in determining a preferred alternative is the flexibility for expansion.
T4	Les Smith	A. Fears that decisions on project have been made without input from private landowners.	A. At this time, no decision on this project has been made by either the BLM or USFS. A Record of Decision is expected following public review of the Final PA/EIS.
Deming			
D1	Allen Beck	A. Recommends alternative Route 33 which will miss his ranch headquarters, other residences and buildings and crosses less private land.	A. Your comment has been noted and considered.

Table 4-1 (continued)
Summary of Public Hearing Comments/Agency Responses

Comment Number	From	Issue/Concern	Response
D2	Teri Smith-Eskey	A. Recommends No Action alternative as power is not needed.	A. EPE's purpose and need statement for the project is sufficient to grant a right-of-way. The New Mexico Public Service Commission will decide if EPE need can support issuance of a Certificate of Convenience and Necessity.
D3	Steve Marlatt	A. No-Action alternative needs to be evaluated. B. Alternative energy sources needs to be evaluated, particularly solar energy.	A. The no-action alternative was evaluated. See Draft PA/EIS, pages 3-4 to 3-6, and Chapter 2 of this document. B. EPE has investigated and participated in the experimental development of numerous alternative generation sources including cogeneration, pumped hydroelectric, biomass and solar (including wind generation). Experimental projects include photovoltaic, solar repowering, solar pond, and wind mapping and wind electrical generation. Photovoltaics and the solar pond project, as experimental technologies, have proven to be successful. A solar repowering project was submitted to the Department of Energy for final design and testing, and was not accepted. The testing of wind generating projects are ongoing as experimental technologies. Also see Chapter 2 for additional information on alternative generation sources.
D4	Joanne Hardesty	A. Do not believe there is a need for the proposed transmission line.	A. See response to comment D-2.

Table 4-1 (continued)
Summary of Public Hearing Comments/Agency Responses

Comment Number	From	Issue/Concern	Response
D5	Ann Embury	A. Do not believe project is needed. Should look for alternative energy sources.	A. See responses to comment D-2 and D-3B.
D6	Patrick Smith	A. Concerned about raptors and biological impacts.	A. Your comment has been noted and considered.
D7	Pat Danser	A. Favors Route E over Route C as it will have less impacts to raptors.	A. Your comment has been noted and considered.
Silver City			
S1	Bill Carlis	A. Recommends utilizing the existing utility corridor in favor of opening up a new corridor.	A. Your comment has been noted and considered.
		B. Draft PA/EIS does not address alternatives to the power line.	B. All reasonable and feasible alternatives have been considered.
		C. Preferred alternative would interfere with Very Large Array (VLA) radio telescope. Director of the University of New Mexico, Institute for Astrophysics was not aware of proposed project.	C. See letter #1 from the National Radio Astronomy Observatory. They do not see any routing alternative interfering with the VLA or antennae.
		D. VLA area should be Area of Critical Environmental Quality.	D. No Areas of Critical Environmental Concern (ACEC) are impacted by the alternatives.

Table 4-1 (continued)
Summary of Public Hearing Comments/Agency Responses

Comment Number	From	Issue/Concern	Response
		E. Do not believe there is a need for the project.	E. EPE's purpose and need statement for the project is sufficient to grant a right-of-way. The New Mexico Public Service Commission will decide if EPE need can support issuance of a Certificate of Convenience and Necessity.
		F. There was inadequate and improper notification of project.	F. In the course of preparing this document, formal and informal efforts were made to involve the public in the planning and environmental process. The requirements of public involvement mandated by regulations were strictly complied with. In addition to our required efforts, numerous other actions were taken to involve and inform the public. Please refer to the Public Participation and Coordination section (Chapter 3) of this document.
		G. Nuclear power is not economy energy.	G. Nuclear power generation is not part of this project and, therefore, outside the scope of analysis. EPE believes that nuclear power can be economy energy under specific circumstances.

Table 4-1 (continued)
Summary of Public Hearing Comments/Agency Responses

Comment Number	From	Issue/Concern	Response
51	Anna Estuary	H. Alternative generation sources should be explored.	H. EPE has investigated and participated in the experimental development of numerous alternative generation sources including cogeneration, pumped hydroelectric, biomass and solar (including wind generation). Experimental projects include photovoltaic, solar repowering, solar pond, and wind mapping and wind electrical generation. Photovoltaics and the solar pond project, as experimental technologies, have proven to be successful. A solar repowering project was submitted to the Department of Energy for final design and testing, and was not accepted. The testing of wind generating projects are ongoing as experimental technologies. Also see Chapter 2 for additional information on alternative generation sources.
52	Herbie Marsden	A. Alternatives to the proposed action were not adequately considered. B. El Paso transmission capacity only used to approximately 10 percent capacity. C. Problem of radio interference.	A. All reasonable alternatives have been considered. B. This figure is incorrect. EPE loads their transmission lines to the maximum extent possible during peak periods given safety and reliability limitations. C. The impacts of radio interference were covered in the Draft PA/EIS, page 5-32. EPE will mitigate interference to pre-construction levels.

Table 4-1 (continued)
Summary of Public Hearing Comments/Agency Responses

Comment Number	From	Issue/Concern	Response
		D. The Direct Current (DC) alternative was not really considered.	D. The DC alternative was considered and because of economic reasons was rejected. The environmental impacts from a DC transmission line would be comparable to those of an AC line. See Draft PA/EIS page 3-3.
S3	Tip Cowan	A. Care in issuing right-of-way.	A. Your comment has been noted and considered.
S4	Nancy Stockdale	A. Population decrease does not justify need for project.	A. EPE's purpose and need statement for the project is sufficient to grant a right-of-way. The New Mexico Public Service Commission will decide if EPE need can support issuance of a Certificate of Convenience and Necessity.
		B. Would like to know percent of BTU's burned which will come out in El Paso.	B. EPE's local generation has a monthly average heat rate of 10,690 KW/BTU. This is for units fired by natural gas. The larger coal and nuclear units remotely located from El Paso have slightly better heat rates (EPE January 1987 monthly system report). The 345kV transmission system experiences different losses depending upon the load being carried. A typical case is at the 152.5 MW loading level a 200-mile 345kV line will experience 2.5 MW (or 1.64 percent) of losses (New Mexico Power Pool, 1987 HS Base Case, West Mesa to Arroyo).

Table 4-1 (continued)
Summary of Public Hearing Comments/Agency Responses

Comment Number	From	Issue/Concern	Response
		C. Alternative energy is better way to spend money than proposed project.	<p>The efficiency of conversion of KW back into BTUs is a direct function of the device doing the conversion. The BTU in El Paso questioned by the speaker depends upon the device doing the conversion--be it electrical resistance heating, a motor, or a compressor pump.</p> <p>C. EPE has investigated and participated in the experimental development of numerous alternative generation sources including cogeneration, pumped hydroelectric, biomass and solar (including wind generation). Experimental projects include photovoltaic, solar repowering, solar pond, and wind mapping and wind electrical generation. Photovoltaics and the solar pond project, as experimental technologies, have proven to be successful. A solar repowering project was submitted to the Department of Energy for final design and testing, and was not accepted. The testing of wind generating projects are ongoing as experimental technologies. Also see Chapter 2 for additional information on alternative generation sources.</p>
55	Peter Glaberman	<p>A. Utilize existing corridor.</p> <p>B. Opposes increased use of ground water resulting from the project.</p>	<p>A. Your comment has been noted and considered.</p> <p>B. Your comment has been noted and considered.</p>

Table 4-1 (continued)
Summary of Public Hearing Comments/Agency Responses

<u>Comment Number</u>	<u>From</u>	<u>Issue/Concern</u>	<u>Response</u>
S6	Michael Sauber	A. Power needs overestimated.	A. EPE's purpose and need statement for the project is sufficient to grant a right-of-way. The New Mexico Public Service Commission will decide if EPE need can support issuance of a Certificate of Convenience and Necessity.

CHAPTER 5 - MODIFICATIONS AND CORRECTIONS

MODIFICATIONS

Visual Resources

Impacts to landscape aesthetics are assessed based on the scenic quality classification and the physical context of the project in that landscape setting. A specific viewer is not considered an element in assessing scenic resource impacts; consequently, distance or viewer sensitivity are not criteria in the analysis. Instead, these components are part of the visual assessment for impacts to viewers, specifically to residences, park and recreation areas, and travel routes.

In reference to the Class B landscape of the Pina de San Agustín, the Pina would receive moderate impacts to landscape aesthetics due to the moderate visual contrasts predicted for project construction in this setting. Table VR-13 in Volume 2 of the technical report supports this conclusion. Moderate contrasts are predicted due to the low stature of vegetation and relatively flat terrain, which allow for overland access to the project corridor. In addition, the moderate colored tower would pose lower with respect to contrast will be backdropped by distant mountain ranges, providing some landscape absorption and reducing structure visibility.

Initial impacts to NM 12 from the crossing by Links 2b, 32 or 34 were predicted to be high as a result of high viewer sensitivity, project visibility within 0.5-1.0 mile, and moderate contrasts (see Table VR-12). With mitigation planning, residual impacts from Links 32 and 34 were predicted to be moderate. Project visibility and physical context could effectively be reduced by placing the tower at a maximum feasible distance from the highway crossing (mitigation measure #12). Towers would then be screened and/or backdropped by adjacent landforms.

WSAs were categorized as high sensitivity as a result of public comment received in the public working meetings during the regional study for the Arizona Interconnection Project. This formed the basis for establishing visual resource constraints and/or opportunities for the initial siting of alternative transmission corridors. As a consequence, WSAs were considered an exclusion area for the initial siting of the proposed project.

In addition, during the environmental studies for the EIS, all viewpoints identified within the study corridors were inventoried and assigned sensitivity levels. The high sensitivity assigned WSAs referenced specific viewpoints located within these WSAs (e.g., World). However, no specific viewpoints were found within WSAs that were also located within the six-mile-wide study corridor. If this had been the case, a visibility assessment would have been completed for these specific viewpoints located within the WSA. In addition, since a WSA is considered a dispersed recreation area, the term **CHAPTER 5**
MODIFICATIONS AND CORRECTIONS

CHAPTER 5 - MODIFICATIONS AND CORRECTIONS

MODIFICATIONS

Visual Resources

Impacts to landscape aesthetics are assessed based on the scenic quality classification and the physical contrast of the project in that landscape setting. A specific viewer is not considered an element in assessing scenic resource impacts; consequently, distance or viewer sensitivity are not criteria in the analysis. Instead, these components are part of the visual assessment for impacts to viewers, specifically to residences, park and recreation areas, and travel routes.

In reference to the Class B landscape of the Plains of San Agustin, the Plains would receive moderate impacts to landscape aesthetics due to the moderate visual contrasts predicted for project construction in this setting. Table VR-10 in Volume 3 of the technical report supports this conclusion. Moderate contrasts are predicted due to the low stature of vegetation and relatively flat terrain, which allows for overland access to the project corridor. In addition, the moderate colored brown wood pole tower with nonspecular conductors will be backdropped by distant mountain ranges, providing some landscape absorption and reducing structure visibility.

Initial impacts to NM 12 from its crossing by Links 2b, 52 or 54 were predicted to be high as a result of high viewer sensitivity, project visibility within 0.5-1.0 mile, and moderate contrasts (see Table VR-12). With mitigation planning, residual impacts from Links 52 and 54 were predicted to be moderate. Project visibility and physical contrast could effectively be reduced by placing the towers at a maximum feasible distance from the highway crossing (selective mitigation measure #12). Towers would then be screened and/or backdropped by adjacent landforms.

WSAs were categorized as high sensitivity (as a result of public comment received in the public scoping meetings) during the regional study for the Arizona Interconnection Project. This formed the basis for establishing visual resource constraints and/or opportunities for the initial siting of alternative transmission corridors. As a consequence, WSAs were considered an exclusion area for the initial siting of the proposed project.

In addition, during the environmental studies for the EIS, all viewpoints located within the study corridors were inventoried and assigned sensitivity levels. The high sensitivity assigned WSAs references specific viewpoints located within these WSAs (e.g., trails). However, no specific viewpoints were found within WSAs that were also located within the six-mile-wide study corridor. If this had been the case, a visibility assessment would have been completed for these specific viewpoints located within the WSA. In addition, since a WSA is considered a dispersed recreation area, the boundaries of this designation cannot be considered a specific viewpoint. Federal regulation

states that a buffer zone should be included in the planning process when designating boundaries, and not created around the perimeter afterwards.

Mitigation will be implemented by the federal agencies prior to issuance of the special-use permits and easements across federal lands.

Impacts to VRM classes were derived using the BLM Visual Resource Contrast Rating Manual (BLM Manual Handbook, H-8431-1, Rel 8-30) as a reference. In order to determine whether VRM objectives would be met from construction of the proposed 345kV transmission line, residual project impacts were compared to VRM classes crossed. Visual change associated with high impacts would not meet the management objectives of VRM II or III. Therefore, high residual impacts in combination with the crossing of VRM II or III landscapes would result in a reduction classification downward to a VRM IV area. Moderate impacts, where the project would create noticeable but not dominant visual effect in the landscape, would not meet the management objectives of VRM II areas resulting in a reduction to a VRM III landscape.

Table 5-1 indicates locations, by link and milepost, where VRM classes may be reduced due to project construction. Table 5-2 lists total miles of landscape crossed resulting in VRM class reductions from VRM II to IV, II to III, and III to IV.

To summarize, of the western alternatives, Route E best minimizes effects to VRM classes. Only 0.5 mile of VRM II would be reduced to VRM III. Of the eastern alternatives, Route D would be preferred for minimizing impacts to VRM classes. This route would result in reduction of 0.6 mile of VRM II and 2.4 miles of VRM III to VRM IV, and 5.1 miles of VRM II to VRM III.

According to the visual impact assessment methodology used in the Arizona Interconnection Project Environmental Study, high impacts would occur if the proposed project were visible within 0.5 to 1.0 mile of the viewer in combination with strong or moderate contrasts, and high or moderate sensitivity viewers. The project may be visible to the viewer at distances greater than one mile, but would not visually dominate the setting, therefore constituting a lower impact level. These parameters are related to apparent size and other scale factors, and are based upon analysis of distance effects on views of similar transmission lines in the study area and in other transmission line studies in the desert Southwest landscape. In addition, this criteria is supported by research studies on visual perception of similar transmission lines (Jones and Jones 1976) where distance was found to be a primary factor in determining compatibility between transmission facilities and the landscape setting. Compatibility was found to increase rapidly between foreground and middleground distance zones. This was attributed, in part, to the receptivity characteristics of the human eye and apparent size. The apparent size of an object refers to the stimulated area of the human retina which forms the object's image. The fovea, located in the center of the retina, functions in providing maximum visual acuity and the gathering of detailed information.

TABLE 5-1
IMPACTS TO VRM CLASSES

Link	Milepost		Initial VRM Class	Resultant VRM Class	Level Downward	Total Miles
	Begin	End				
1b	1.6	2.6	III	IV	1	1.0
	2.6	3.2	II	IV	2	0.6
	3.2	3.5	III	IV	1	0.3
	24.3	25.7	III	IV	1	1.4
2b	0.5	1.5	II	III	1	1.0
	1.5	2.8	II	IV	2	1.3
3	11.4	13.2	II	IV	2	1.8
	13.6	15.1	II	IV	2	1.5
	15.1	16.5	III	IV	1	1.4
	16.9	17.6	II	IV	2	0.7
	20.5	21.5	II	IV	2	1.0
	22.7	23.4	II	IV	2	0.7
	23.4	28.2	II	III	1	4.8
	28.2	28.7	II	IV	2	0.5
9f	28.7	33.0	II	III	1	4.3
	2.3	2.9	II	III	1	0.6
11b	0.0	0.2	II	III	1	0.2
	0.9	1.2	II	III	1	0.3
12	1.1	3.3	III	IV	1	2.2
	3.7	4.0	II	III	1	0.3
13	2.4	2.6	II	III	1	0.2
14	0.0	7.3	II	III	1	7.3
15	0.0	0.4	II	III	1	0.4
	0.7	5.7	II	III	1	5.0
	10.8	11.4	III	IV	1	0.6
	23.8	23.9	III	IV	1	0.1
	31.4	32.3	III	IV	1	0.9
	33.5	33.9	III	IV	1	0.4
16	10.6	12.6	II	III	1	2.0
17a	6.0	7.5	III	IV	1	1.5
	9.7	10.0	II	IV	2	0.3

Table 5-1 (continued)
Impacts to VRM Classes

Link	Milepost		Initial VRM Class	Resultant VRM Class	Level Downward	Total Miles
	Begin	End				
18	16.3	16.9	II	IV	2	0.6
19a	1.6	4.8	II	III	1	3.2
19b	0.0	0.2	II	III	1	0.2
20	1.2	2.0	II	III	1	0.8
21	3.2	5.8	II	III	1	2.6
	6.5	7.5	II	III	1	1.0
22	0.2	1.1	III	IV	1	0.9
	2.2	3.2	II	III	1	1.0
24	1.7	2.6	II	III	1	0.9
26	27.2	28.1	II	III	1	0.9
	28.1	28.5	II	IV	2	0.4
	28.5	30.1	III	IV	1	1.6
27	7.7	7.9	II	III	1	0.2
	8.3	8.4	II	III	1	0.1
	9.1	10.0	II	IV	2	0.9
	11.0	11.2	III	IV	1	0.2
	11.9	13.0	III	IV	1	1.1
	13.0	14.8	II	III	1	1.8
	21.4	22.5	II	IV	2	1.1
	22.5	22.7	II	III	1	0.2
	25.0	26.0	III	IV	1	1.0
28	3.3	4.0	II	III	1	0.7
29	2.7	3.5	II	III	1	0.8
32	0.5	1.1	II	III	1	0.6
	1.3	1.9	III	IV	1	0.6
	6.8	7.0	II	III	1	0.2
	22.7	23.2	III	IV	1	0.5

Table 5-1 (continued)
Impacts to VRM Classes

Link	Milepost		Initial VRM Class	Resultant VRM Class	Level Downward	Total Miles
	Begin	End				
33	0.0	1.1	III	IV	1	1.1
	7.1	7.7	III	IV	1	0.6
	13.0	14.9	III	IV	1	1.9
	14.9	15.3	II	IV	2	0.4
	7.8	18.1	II	IV	2	0.3
	19.4	20.0	III	IV	1	0.6
	20.0	20.3	II	IV	2	0.3
	20.3	20.4	II	III	1	0.1
34	0.0	0.7	III	IV	1	0.7
	8.2	8.8	III	IV	1	0.6
	13.7	14.3	III	IV	1	0.6
	16.0	16.4	II	III	1	0.4
35	0.0	0.8	III	IV	1	0.8
	5.0	5.5	III	IV	1	0.5
45	7.2	10.0	II	IV	2	2.8
	10.0	10.1	III	IV	1	0.1
46	47.0	47.5	II	III	1	0.5
47	2.6	3.6	II	IV	2	1.0
	4.0	4.4	II	IV	2	0.4
	4.4	4.8	II	III	1	0.4
	11.5	12.5	II	IV	2	1.0
	12.5	12.7	II	III	1	0.2
	31.8	32.5	II	III	1	0.7
	32.5	33.7	II	IV	2	1.2
	36.5	36.6	II	III	1	0.1
48a	1.5	3.0	III	IV	1	1.5
	3.0	3.2	II	IV	2	0.2
	3.2	4.2	III	IV	1	1.0
	5.2	5.9	II	III	1	0.7
	8.0	8.4	II	IV	2	0.4
	11.4	17.6	II	III	1	6.2
	17.6	28.8	II	IV	2	11.2

Table 5-1 (continued)
Impacts to VRM Classes

Link	Milepost		Initial VRM Class	Resultant VRM Class	Level Downward	Total Miles
	Begin	End				
48a (cont)	28.8	30.8	II	III	1	2.0
	30.8	32.2	II	IV	2	1.4
	32.2	33.1	II	III	1	0.9
	33.1	39.2	II	IV	2	6.1
	39.2	39.6	III	IV	1	0.4
48d	20.4	22.7	III	IV	1	2.3
	28.5	29.0	III	IV	1	0.5
	34.0	36.5	III	IV	1	2.5
51	4.3	4.4	II	III	1	0.1
52	0.0	0.2	II	III	1	0.2
53	0.0	0.4	II	III	1	0.4
54	5.2	5.8	II	III	1	0.6
	8.2	10.6	II	III	1	2.4

TABLE 5-2
TOTAL MILES OF VRM CLASS IMPACTS BY ROUTE

Route	Miles		
	Change from VRM II to VRM IV	Change from VRM II to VRM III	Change from VRM III to VRM IV
A	0.6	16.0	8.0
B	2.5	5.8	5.1
C	-	16.5	5.3
D	0.6	5.1	2.4
E	-	0.5	-
F	6.4	1.4	0.1
G	22.1	9.8	8.3

The use of "Contrast Rating System" was not intended to describe the reinventory of this component, rather it was meant as a description in referencing the BLM visual resource methodology.

Mitigation Measures

Selectively Committed Mitigation was recommended whenever it was believed to be effective by the resource specialist. Detailed rehabilitation and reclamation methods will be outlined in the operation plan that will be reviewed and approved by the federal agencies prior to issuance of special-use permits.

Cultural Resources

The Native American Contact program was designed in consultation with Pam Smith, Los Cruces District Archeologist, to ensure that all appropriate tribal groups would be informed of the potential project review and afforded an opportunity to provide input. Although registered mail was not used, letters were sent to 12 groups:

Pueblo of Acoma
Pueblo of Yalata
Pueblo of Laguna
Ramah Navajo Tribe
Alamo Navajo Chapter
Canyasita Navajo Band

San Carlos Apache
Mescalero Apache
Pueblo of Zuni
Nuestra Señora de Guadalupe
Yalata del Sur Pueblo
White Mountain Apache

Transmission facilities in the high visibility zone are those that cannot be contained in the fovea, which require scanning movements of the eye for detailed perception.

The distance where the transmission line project may be perceived in a single glance defines the boundary between high and moderate threshold. Research has confirmed this distance to be 0.9 mile for transmission line facilities similar to that proposed by EPE.

Beyond this distance, the proportion of field-of-view affects visibility or perception of an object. In other words, the scale of the transmission line relative to the total field-of-view of the eye would diminish. Other stimuli would fill the fovea and reduce our perceived dominance of the object.

Although a reinventory of a portion of lands located in the BLM Socorro Resource Area occurred in the summer of 1986, this was occurring simultaneously, and the data were unavailable for the visual resource inventory for the Arizona Interconnection Project. The visual resource inventory for this project was conducted during July and August 1986. In addition, the updated inventory occurred on a small portion of Socorro Resource Area lands located within the project study area.

The use of "Contrast Rating System" was not intended to describe the reinventory of this component, rather it was meant as a description in referencing the BLM visual resource methodology.

Mitigation Measures

Selectively Committed Mitigation was recommended wherever it was believed to be effective by the resource specialist. Detailed rehabilitation and reclamation methods will be outlined in the operation plan that will be reviewed and approved by the federal agencies prior to issuance of special-use permits.

Cultural Resources

The Native American contact program was designed in consultation with Pam Smith, Las Cruces District Archaeologist, to assure that all appropriate tribal groups would be informed of the potential project routes and afforded an opportunity to provide input. Although registered mail was not used, letters were sent to 12 groups:

Pueblo of Acoma
Pueblo of Ysleta
Pueblo of Laguna
Ramah Navajo Tribe
Alamo Navajo Chapter
Canyoncito Navajo Band

San Carlos Apache
Mescalero Apache
Pueblo of Zuni
Nuestra Sonora de Guadalupe
Ysleta del Sur Pueblo
White Mountain Apache

Follow-up telephone calls were made to all groups with telephones (nine of them). Two groups, the Ramah Navajo Tribe and Ysleta del Sur Pueblo, indicated that they had no concerns or objections. The Zuni responded with a list of 11 sensitive locations in southwestern New Mexico. Only one of these lies on one of the alternatives. As documented in the DEIS and Technical Report (Volume 4), continued consultation with Zuni is therefore necessary.

An additional telephone call to the Tribal Secretary at Laguna was made during the comment period, in response to a suggestion that the Laguna tribe might consider the Pelona and Luera mountains sensitive areas. The Tribal Secretary said that although ceremonials are held in those mountains, the presence of a transmission line would not affect them or be considered objectionable.

A strategy for continued attention to Native American concerns will be developed in consultation with the BLM as necessary, as the project progresses.

The columns in Table CR-12 have been rearranged so that they follow logically from the text and from each other. Brief explanations as to how each column was derived are now shown on the table included in this section.

Biological Resources

A number of big and small game species occur within alternative corridors of the proposed project. Many of these species, especially small game, are likely to occur almost throughout the project area. In New Mexico, small game species present include cottontail rabbit (Sylvilagus spp.), scaled quail (Callipepla squamata), mourning dove (Zenaida macroura), and a variety of migratory waterfowl including ducks, geese, swans, and cranes, all of which occur in areas where open, relatively permanent water is present (e.g., lakes, reservoirs and stock ponds). Big game species present in New Mexico alternative links include mule deer (Odocoileus hemionus), white-tailed deer (O. virginianus), American pronghorn (Antilocapra americanus), and Rocky Mountain elk (Cervus elaphus). Black bears (Ursus americanus) and mountain lions (Felis concolor) may also be present in some of the more mountainous areas traversed by New Mexico alternatives. The USFS has specifically identified parts of Link 26 as potential mule deer, white-tailed deer, Rocky Mountain elk, and American pronghorn habitat. Additionally, the BLM has identified a spring forb use area for American pronghorn on Link 15. Of the big game species listed above, mule deer is probably the most widespread and may be expected to occur in just about any of the alternative links.

Link 46, the only alternative link in Arizona, traverses a number of habitat types, each of which supports some game species. Areas of Chihuahuan Desertscrub on this link provide marginal big game habitat for American pronghorn, mule deer, and javelina (Dicotyles tajacu). Fair to good populations of scaled and gambel's quail (Callipepla gambeli) occur in Chihuahuan Desertscrub habitats along with mourning doves. At slightly higher elevations

TABLE CR-12
COMPARISON OF ALTERNATIVE ROUTES

<u>Alternative Route(1)</u>	<u>Miles High Impact(4)</u>	<u>Miles Moderate Impact(5)</u>	<u>Miles Low Impact(6)</u>	<u>Cumulative Impact Index(7)</u>	<u>Rank(8)</u>	<u>Impact Level(9)</u>	<u>Cumulative Overall Sensitivity(2)</u>	<u>Potential Acreage Disturbed(3)</u>
A	7	131	79	2,575	5	M-L	3,157	1,766
B	6	133	82	2,565	5	M-L	3,165	1,767
C	8	118	89	2,467	4	M-L	3,000	1,719
D	7	114	89	2,406	4	M-L	2,942	1,689
E	2	56	149	1,503	1	L-M	2,394	1,304
F	3	90	105	1,868	3	L-M	2,639	1,385
G	4	87	82	1,744	2	L-M	2,503	1,153

(1) Route identifier.

(2) Totals composite sensitivity indexes from each mile in each route; composite sensitivity indexes derived from addition of scores indicating known site presence, and potential for additional sites as predicted by topography and vegetation type.

(3) Calculated by adding tower construction disturbance plus acreage associated with access road disturbance types for each mile in each route.

(4), (5) and (6) Anticipated acreage disturbed was first multiplied by composite sensitivity index for each mile, then multiplied by 0.1 yielding an Impact Index. Based on distribution of these values, impacts for each mile were rated as follows: Low = 1-8; Moderate = 10-21; High = 24-28. Finally, miles of each value were totaled for each route yielding columns (4), (5) and (6).

(7) These indexes simply total the impact indexes by route.

(8) Derived from column (7); ranks routes according to Cumulative Impact Index.

(9) Translates column (8) into verbally described levels ranging from Low-Moderate to Moderate-Low.

on Link 46, where desert grasslands and Chihuahuan Deserts merge with pinyon-juniper woodlands, populations of mule deer, javelina, black bear, mountain lion, and Merriam's turkey (Meleagris gallopavo) are known to occur. That portion of Link 46 that runs from the New Mexico State Line south to the Apache National Forest boundary is characterized by pinyon-juniper woodlands, oak-pine woodlands, and high grasslands. This area supports excellent populations of mule deer, black bear, Merriam's turkey, mountain lion, javelina, and, locally, Rocky Mountain bighorn sheep (Ovis canadensis).

The only areas identified by the U.S. Fish and Wildlife Service and the State of New Mexico, Department of Game and Fish that were of concern relative to peregrine falcons occurred on Links 41 to 45 (parts of Routes E, F and G). There were no peregrine falcon areas identified anywhere on Route C. Dr. John P. Hubbard, New Mexico Game and Fish Department, has indicated (personal communication, April 8, 1986) that he feels most peregrine falcon observations in areas traversed by Route C are actually misidentified prairie falcons which are relatively common in west-central New Mexico. The aerial photographic interpretation of the area traversed by Route C in the Winston area is that most of the habitats crossed are juniper-pinyon woodlands and juniper grasslands with no flowing water or large standing bodies of water near major cliff systems. The latter suggests rather strongly that the habitat involved is not ideal nesting habitat for peregrine falcons. Peregrines could occur in the area, however, during migration or in winter. If peregrine falcon nests are discovered in the area, EPE will avoid those habitats and cease construction in the area during nesting periods.

Refer to Appendix B for an additional discussion of bald eagles. It is very likely that bald eagles occur in many of the areas along Route C. However, no agency biologists identified any single area as being an important winter concentration or nesting area. The habitat seems generally unsuited for nesting (no major cliff systems near water or prey species concentration areas). Bald eagles may occur almost anywhere in west-central New Mexico during migration or as occasional winter visitors, but unless there is a major concentration area (e.g., an area of abundant food in the form of fish, ducks, or jack rabbits, or a roosting area), numbers of bald eagles are generally very low. Additional information on bald eagles, peregrine falcons, and other raptors is contained in Appendix B of this document. (Biological Assessment submitted to USFWS.)

The environmental impacts by major resource are detailed in Volume 2 (Tables ER-2, ER-4, and BIO-14), Volume 3 (Tables LU-8 and VR-14) and Volume 4 (Table CR-9) of the technical reports by link and milepost (available at BLM and USFS offices). The regional study conducted prior to alternative route selection was undertaken specifically to identify highly sensitive features that should be avoided by alternative routes. The vast majority of sensitive biotic elements were successfully avoided in this manner. The result was a series of alternative links upon which very few known sensitive features occurred. These links were further studied in the second phase of the project and found to be generally free of highly sensitive elements.

Significant effects, identified by localized occurrences of the impacts, were defined as being a "high" impact. All biological effects were considered in the ranking of alternatives and each potentially significant effect was assigned a recommended mitigation measure (or measures) that would reduce or eliminate the negative effect. For example, in an area where potential occurrence of sensitive plants existed, it was recommended that a preconstruction survey be done to verify such presence or absence. If such a potential occurred within a riparian crossing, the additive effect of possible rare plant occurrence in a riparian area resulted in a higher potential impact level than would have been assigned for the rare plant or the riparian community alone. In addition to such a situation receiving a higher impact rating, additional mitigation measures were recommended. Ranking the routes is used to summarize the impacts by each route and select the preferred route for each resource which has the least impact. This method was used to help illustrate the preferred route selection process.

Refer to Appendix B for additional biological data and studies completed as part of the Biological Assessment.

This process is well documented in the technical report and, in the interest of brevity, was not repeated in the Draft PA/EIS, Chapter 5.

CORRECTIONS

Summary

Page S-1, Paragraph 1, Line 6: "55 feet" should be "75 feet".

Page S-4, Paragraph 4, under Affected Environment, add the following sentence: "A pronghorn special use area is an area containing a forbe(s) conducive to the pronghorn antelope's diet."

Page S-7, last paragraph in summary table: "58" should be "59" and "4" should be "5".

Chapter 1

Page 1-1, Paragraph 4, Line 8: "firm" should be "firm". Also, add the following sentence: "Firm transmission capacity means a strengthening of the transmission system will allow EPE flexibility and reliability without serious potential electrical problems from a single line outage."

Chapter 2

Page 2-11, Paragraph 6, Line 2: "final EIS" should be "final PA/EIS".

Chapter 4

Page 4-3, Paragraph 2, Line 13: add "(air quality attainment designations: 40 CFR 81.332)".

Page 4-11, Paragraph 1, following Sentence 3, should read as follows: "The narrow-headed and Mexican garter snakes are listed by both the states of Arizona and New Mexico, and are most likely to be found in moist areas traversed by Links 41-48. The narrow-headed garter snake is found in streams that drain the Mogollon Plateau, usually where coniferous forest is the dominant upland habitat. It has been found in New Mexico, however, at much lower elevations on the Gila River near the Arizona State border. The Mexican garter snake usually occurs in streams and springs at somewhat lower elevations than the narrow-headed garter snake, but has been found in habitats ranging upslope into pine-oak woodland." In existing Sentence 4, delete portion stating "The garter snakes are most likely to occur within moist areas traversed by Links 41-48." and begin sentence with "The Kingsnake is most likely to occur...".

Page 4-11, Paragraph 2, Line 1: See Appendix B for expanded discussion on bald eagles.

Page 4-11, Paragraph 3: delete Sentence 2.

Page 4-21, following Paragraph 1, insert the following paragraph: "While there are no designated public recreation areas crossed by Route A, portions of the Plains of San Agustin are popular hunting grounds for pronghorn antelope, deer and elk."

Page 4-21, Paragraphs 3 and 9, Line 1: "15.4" should be "20.2".

Page 4-22, following Paragraph 4, under "Route C", insert the following paragraph: "While there are no designated public recreation areas crossed by Route C, portions of the Plains of San Agustin are popular hunting grounds for pronghorn antelope, deer and elk."

Page 4-24, Paragraph 4 under "Route G", Line 1: "72 miles" should be "69.7 miles".

Page 4-28, Paragraph 3, under "Fiscal Characteristics", Line 13, "\$100" should be changed to "\$1,000".

Page 4-31, Paragraph 3: "Visual Management Objectives (USFS)" should be "Visual Quality Objectives".

Page 4-35, Paragraph 5, Sentence 4, following "... CDNST alignment" add: "(crossing state, private, BLM, and USFS lands)".

Page 4-43, Paragraph 4, Line 1: "Isleta" should be "Ysleta". Paragraph 5, Line 1: "YIsleta" should be "Ysleta".

Table 4-6, under "Income": "Rank, 1984" should be "Rank, 1984*". Also add below Sources: "*Rank, 1984 is the income rank of the county in the State of New Mexico in 1984."

Table 4-7 Fiscal Characteristics: In the column reading "FY 1985-1986 Tax Rate", the tax rates for Greenlee County should be changed to 13.67 for #2200, 53.14 for #0300, 45.77 for #0200, and 51.77 for #0230. The heading should be changed to "FY 1985-1986 Tax Rate/\$1000 Assessed Value". In the eighth line, "14,972" should be changed to "14.972." In the 12th line, "48,855,000" should be changed to "69,893,038". Delete second * on Line 14 and the reference to "**FY 1984-1985". Add to bottom of table: "Note: Tax Code Area is a geographic boundary within which property taxes are assessed at the same rate. The tax rates are the sum of the levies by taxing jurisdictions within a Tax Code Area."

Table 4-8, add to bottom of table: "Note: N/A means not available."

Table 4-9, add the following information to this table (also can be found in Technical Report, Volume 3, Pages 6-9, 6-10, and 6-11):

BLM visual resource management class guidelines are as follows:

Class I. This class provides primarily for natural ecological changes; however, it does not preclude very limited management activity. Any contrast created within the characteristic environment must not attract attention.

Class II. Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape. A contrast may be seen but should not attract attention. It is important to note that WSAs considered to be Class II by the BLM had not been identified when the original BLM visual analysis was completed.

Class III. Contrasts to the basic elements (form, line, color, texture) caused by a management activity may be evident and begin to attract attention in the characteristic landscape. However, the changes should remain subordinate to the existing characteristic landscape.

Class IV. Contrasts may attract attention and be a dominant feature of the landscape in terms of scale; however, the change should repeat the basic elements (form, line, color, texture) inherent in the characteristic landscape.

The USFS visual system recognizes five management levels (VQO) for visual resources. As with Class I on BLM lands, Preservation is a special designation reserved for areas justifying stringent visual control. VQO guidelines are as follows:

- Preservation - Management activities, except for very low visual impact recreation facilities, are prohibited. This VQO allows for only

"ecological" changes. This management objective applies to wilderness areas, primitive areas, other special classified areas, and some unique management units which do not justify special classification.

- Retention - Management activities must not be visually evident to the casual forest visitor. Modifications must repeat form, line, color and texture found in the surrounding natural landscape.
- Partial Retention - Modifications may be visually evident, but must be integrated into and visually subordinate to the surrounding landscape. Activities may introduce form, line, color and texture not common in the surrounding landscape, but they should not attract attention.
- Modification - Management activities may visually dominate the surrounding natural landscape; however, they must repeat the naturally established elements of form, line, color and texture to appear compatible with the natural surroundings.
- Maximum Modifications - Modifications may visually dominate the surrounding natural landscape, yet when viewed from background distance, activities must appear as natural occurrences within the landscape. Alterations in foreground and middleground views may be out of scale with or introduce visual elements not found in the natural landscape.

Chapter 5

Page 5-2, Paragraph 3, first sentence: This statement applies "in some cases" only. Table 5-1, Item 15 states "EPE shall take any other such soil and resource conservation protection measures as the Authorized Officer determines necessary."

Page 5-4, Paragraph 3, add sentence to end of paragraph: "Standard dust mitigation measures will be implemented, such as continuous watering in construction areas, daily watering and/or use of chemical suppressants."

Page 5-9, under Results, add to Item #8: "For example, for the preservation and protection of existing riparian habitat, a minimum right-of-way clearing at stream crossings and vegetation feathering along the right-of-way edges will be implemented as mitigation features to protect these resources."

Page 5-9, last paragraph, following Sentence 4, add the following sentence: "A pronghorn special use area is an area containing a forbe(s) conducive to the pronghorn antelope's diet."

Page 5-11, Paragraph 1, Sentence 3, should read as follows: "Potential impacts on this route are associated with crossings of the Gila and San Francisco rivers and other areas where riparian habitat occurs, which may be occupied by sensitive species such as the narrow-headed garter snake."

Page 5-11, Paragraph 2, Line 10, should read: "tail, chub, Gila monster, and narrow-headed garter snake".

Page 5-12, Paragraph 1, Sentence 3: "affects" should be "effects" in both uses.

Page 5-13, following Paragraph 3, under "Route A", insert the following paragraph: "Although Route A does not cross designated public recreation sites, the project may potentially affect the quantity and quality of dispersed recreation; i.e., increased levels of vehicular access resulting from the project would also provide easier access to hunting grounds on the Plains of San Agustin. The project would therefore be perceived as a beneficial change by some hunters, but perhaps considered a reduction in the quality of the recreational setting by those hunters seeking a more primitive hunting experience."

Page 5-14, following Paragraph 2, under "Route C", insert the following paragraph: "Although Route C does not cross designated public recreation sites, the project may potentially affect the quantity and quality of dispersed recreation; i.e., increased levels of vehicular access resulting from the project would also provide easier access to hunting grounds on the Plains of San Agustin. The project would therefore be perceived as a beneficial change by some hunters, but perhaps considered a reduction in the quality of the recreational setting by those hunters seeking a more primitive hunting experience."

Page 5-18, table, for Route C: acreage displaced per mile should be "1.37". A corrected version of the table is shown below.

<u>Route</u>	<u>Acreage Displaced per Mile</u>	<u>Rank</u>
A	1.32	3
B	1.04	7
C	1.37	1
D	1.33	2
E	1.11	6
F	1.23	5
G	1.26	4

*Estimated average potential grazing land area displaced by access requirements per mile of transmission line.

Page 5-19, Paragraph 2, under Fiscal Impacts, the last two sentences should be deleted and replaced by: "Property tax rates are generally lower in New Mexico than in Arizona. Rates range from 11.403 per \$1,000 of assessed value in tax code area #1 in Catron County to 53.14 per \$1,000 of assessed value in tax code area #0300 in Greenlee County, Arizona."

Page 5-19, Paragraph 3, under Fiscal Impacts, should be changed to: "Estimated revenues within each county, by alternative, are presented in Table 5-4. As shown in the table, property tax revenues for Route E would be the highest at over \$290,000 during the first year of project operation; revenue from Routes A and B would be over \$210,000 and revenues from Routes C, D, F and G would be lowest at approximately \$173,000 - 199,000. Of the seven study area counties, Greenlee would receive the greatest tax benefits, over \$140,000 from Route E. Next, revenues to Catron County would be between \$60,000 to over \$100,000. For Routes A, B, C and D, revenues for Sierra County would be between \$60,000 and \$70,000. Catron and Sierra counties would receive over 70 percent of total revenues from Routes A, B, C and D."

Table 5-1, Page 1 of 3, Item #1, Line 3: "ouside" should be "outside".

Table 5-1, Page 1 of 3, Item #9, first sentence should read as follows: "EPE shall do everything reasonable within their power to prevent and suppress fires on or near the lands to be occupied under the right-of-way, including making available such construction and maintenance forces as may be reasonably obtainable for the suppression of such fires."

Table 5-1, Page 3 of 3, add Item 17: "No new access roads across terrain less than five percent should be constructed unless circumstances warrant road construction (i.e., drainages)." The project description in the Draft PA/EIS says "Blade up Operation" will be used where feasible. Further, it is stated that access will be constructed in areas of rough terrain or in dense vegetation.

Table 5-3: Figures in table are milepost numbers as described in the key located below the table. A map reference would be extremely detailed and difficult to interpret.

Table 5-4: Corrected version included.

Chapter 6

Page 6-4, Line 3 and 14: "Sol Rosa" should be "Sul Ross".

Appendix C

Page C-12: "National Resources Library" should be "Natural Resource Library".

Map Volume

Table 3-2, Route G, column titled "H-Frame 345kV Parallel(1)": "0.4" should be "0.9". Route C, column titled "Number of Historic Sites(2)": "4" should be "5". A corrected version of this table is included in Chapter I of this document.

Technical Report, Volume 3

Page 6-24, Item 5, add: "Mitigation measures will be implemented during project design, prior to issuance of the special use permit."

Page 6-24, last paragraph, line 1: "I through 12" should be "I through 11".

Table VR-5: Link 22 - length (miles) should read "5.0" not "5.8".

Table VR-12: "Residential Viewer Impacts Matrix" should read "Recreational Viewer Impacts Matrix".

Table VR-14: Corrected version included.

Table VR-14: The abbreviations found in the impact column are defined in the key sheet preceding this table. In addition, the following should be included, defining abbreviations used in the Contrast level column: S = strong, M = moderate, and W = weak.

**TABLE 5-4
PROPERTY TAX REVENUES BY ROUTE***

County	1985-1986 Net Taxable Value	Route A		Route B		Route C	
		Projected Revenues	% of Valuation	Projected Revenues	% of Valuation	Projected Revenues	% of Valuation
Catron	\$ 39,902,823	\$ 102,277	12.7	\$ 106,188	16.1	\$ 77,681	12.4
Grant	300,484,651	-	0.0	-	0.0	-	0.0
Hidalgo	81,407,460	-	0.0	-	0.0	-	0.0
Luna	123,769,955	24,008	1.2	25,696	1.3	24,531	1.3
Sierra	70,916,817	66,206	5.0	70,962	5.4	67,648	5.1
Socorro	69,893,038	28,082	1.6	7,939	0.4	28,694	1.6
Greenlee	61,451,000	-	0.0	-	0.0	-	0.0
Total	\$747,825,740	\$ 220,573		\$ 210,785		\$ 1,985,554	

* Projected property tax revenues by county are the sum of projected revenues for each tax code area in 1986 dollars, calculated as follows: $R = \text{Length} \times \text{Rate} \times \text{Cost} \times \text{Tax Ratio}$.

Where Length = mileage crossed within each tax area.

Rate = tax rate within each tax area per \$1000 of assessed valuation.

Cost = average construction cost per mile calculated separately for each alternative.

Tax Ratio = the ratio applied for determining taxable value. In New Mexico, the tax ratio is one-third. In Arizona, a rate of 26 percent was used which corresponds to the assessment rate for Class 2 properties in 1989, the target year for project operation.

In addition to these county revenues, a portion (approximately 25%) of any revenues paid to federal agencies will be returned to the counties as well.

** Percent of valuation is calculated as the assessed value of the line during the first year of operation divided by the net taxable value from fiscal year 1985-1986 for each county.

Sources: Bureau of Business and Economic Research, University of New Mexico. 1986. County Profiles.

Valley National Bank. 1986. Arizona Statistical Review.

New Mexico Taxation and Revenue Department. October 2, 1986. Personal Communication.

Table 5-4 (continued)
Property Tax Revenues by Route*

County	1985-1986 Net Taxable Value	Route D		Route E		Route F	
		Projected Revenues	% of Valuation	Projected Revenues	% of Valuation	Projected Revenues	% of Valuation
Catron	\$ 39,902,823	\$ 72,453	14.5	\$ 60,901	13.5	\$ 63,633	13.6
Grant	300,484,651	-	0.0	26,898	0.5	81,671	1.4
Hidalgo	81,407,460	-	0.0	35,334	3.1	26,161	2.3
Luna	123,769,955	24,898	1.3	29,950	1.5	27,815	1.4
Sierra	70,916,817	68,761	5.2	-	0.0	-	0.0
Socorro	69,893,038	7,693	0.4	-	0.0	-	0.0
Greenlee	61,451,000	-	0.0	140,923	0.2	-	0.0
Total	\$747,825,740	\$ 173,805		\$ 294,006		\$ 199,279	

* Projected property tax revenues by county are the sum of projected revenues for each tax code area in 1986 dollars, calculated as follows: $R = \text{Length} \times \text{Rate} \times \text{Cost} \times \text{Tax Ratio}$.

Where Length = mileage crossed within each tax area.

Rate = tax rate within each tax area per \$1000 of assessed valuation.

Cost = average construction cost per mile calculated separately for each alternative.

Tax Ratio = the ratio applied for determining taxable value. In New Mexico, the tax ratio is one-third. In Arizona, a rate of 26 percent was used which corresponds to the assessment rate for Class 2 properties in 1989, the target year for project operation.

In addition to these county revenues, a portion (approximately 25%) of any revenues paid to federal agencies will be returned to the counties as well.

** Percent of valuation is calculated as the assessed value of the line during the first year of operation divided by the net taxable value from fiscal year 1985-1986 for each county.

Sources: Bureau of Business and Economic Research, University of New Mexico. 1986. County Profiles.

Valley National Bank. 1986. Arizona Statistical Review.

New Mexico Taxation and Revenue Department. October 2, 1986. Personal Communication.

Table 5-4 (continued)
Property Tax Revenues by Route*

County	1985-1986 Net Taxable Value	Route G	
		Projected Revenues	% of Valuation
Catron	\$ 39,902,823	\$ 67,728	14.5
Grant	300,484,651	95,159	1.7
Hidalgo	81,407,460	-	-
Luna	123,769,955	25,235	1.3
Sierra	70,916,817	-	0.0
Socorro	69,893,038	-	0.0
Greenlee	<u>61,451,000</u>	<u>-</u>	0.0
Total	\$747,825,740	\$ 188,122	

* Projected property tax revenues by county are the sum of projected revenues for each tax code area in 1986 dollars, calculated as follows: $R = \text{Length} \times \text{Rate} \times \text{Cost} \times \text{Tax Ratio}$.

Where Length = mileage crossed within each tax area.

Rate = tax rate within each tax area per \$1000 of assessed valuation.

Cost = average construction cost per mile calculated separately for each alternative.

Tax Ratio = the ratio applied for determining taxable value. In New Mexico, the tax ratio is one-third. In Arizona, a rate of 26 percent was used which corresponds to the assessment rate for Class 2 properties in 1989, the target year for project operation.

In addition to these county revenues, a portion (approximately 25%) of any revenues paid to federal agencies will be returned to the counties as well.

** Percent of valuation is calculated as the assessed value of the line during the first year of operation divided by the net taxable value from fiscal year 1985-1986 for each county.

Sources: Bureau of Business and Economic Research, University of New Mexico. 1986. County Profiles.

Valley National Bank. 1986. Arizona Statistical Review.

New Mexico Taxation and Revenue Department. October 2, 1986. Personal Communication.

Appendix A is a corrected version of the visual impact assessment/mitigation planning chart.

**APPENDIX A
VISUAL IMPACT ASSESSMENT/MITIGATION PLANNING CHART**

Appendix A is a corrected version of the visual impact assessment/mitigation planning chart.

IMPACT ASSESSMENT/MITIGATION PLANNING CHART
RESOURCES VISUAL

1 of 8

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LINE	LENGTH (MILES)	CONTRAST		RESIDENCES				TRAVEL ROUTES				PARKS / RECREATION				LANDSCAPE AESTHETICS				OVERALL VISUAL IMPACTS						LINK	
		LEVEL	MILEPOST BEGIN END	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH	MOD.	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH	MOD.	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH	MOD.	IMPACT	MILEPOST BEGIN END	CLASS	INITIAL IMPACT	MILEPOST BEGIN END	MITIGATION	CONDITIONAL MITIGATION	RESIDUAL IMPACT	SIGNIFICANCE			
46	76.5	H	10.1 11.5	N	7.2 7.6							N	9.2 10.1														
				M	7.6 8.2																						
				M	8.2 10.1																						
				N	10.1 11.5																						
		H	0.0 1.4	N	0.0 1.4					L	0.0 1.4			N	0.0 1.4			L	0.0 1.4	B	L	0.0 1.4					
				M	1.4 2.6					L	1.4 2.6			N	1.4 9.1			L	1.4 2.5	B	L	1.4 2.5					
				M	2.6 3.8	1-B				N	4.2 9.3	RES-B		N	9.1 9.3 SFR			M	2.5 3.2	B	M	2.5 3.2					
				L	3.8 4.0					L	4.0 9.3			N	3.2 9.3	B		M	3.2 9.3	B	M	3.2 9.3					
		S	9.3 9.6	N	9.3 9.6					N	9.3 9.6			H	9.3 9.6 SFR-C			H	9.3 9.6	A	H	9.3 9.6					
				M	9.6 12.4					N	9.6 12.4			M	9.6 10.2 SFR			H	9.6 10.8	B	L	9.6 10.8					
				N	12.4 30.8					M	12.4 21.3			M	10.2 12.4			L	10.8 12.4	C	L	10.8 12.4					
				L	30.8 45.1	2	RG, SH	L	21.3 32.8	AZ78-M, RES	AZ78, RES	L	12.4 30.8			L	12.4 22.3	B	L	12.4 32.8	B	L	12.4 32.8				
47	47.1	H	47.0 47.6	N	12.4 30.8			M	12.4 21.3			L	30.8 45.9			L	24.0 26.8	B	L	33.3 38.5							
				M	30.8 45.1	6	DU, SH	L	32.8 33.3	RES-H	AZ75, RES	L	24.0 26.8			L	26.8 27.3	C	M	38.5 39.9							
				N	45.1 47.1			L	33.3 47.0			L	26.8 27.3			L	27.3 28.0	B	L	39.9 45.1							
				L	47.0 47.6			L	27.3 28.0			L	27.3 28.0			L	28.0 47.0	C	M	45.1 47.0							
		H	47.6 76.5	M	47.0 47.6	20-C	DU	M	47.0 47.6	AZ75/US70-H		H	47.0 47.6 GR-C, H			L	47.0 47.6	B	H	47.0 47.6							
				L	47.6 56.6			L	47.6 60.1	US70-M, RES	US70	M	47.6 48.0	GR		L	47.6 76.5	C	L	47.6 76.5							
				M	56.6 58.7			L	60.1 61.2	RES-H, P		N	48.0 53.2			L	48.0 53.2			L	56.6 60.1						
				N	58.7 59.3			L	61.2 61.5	RES		N	53.2 76.5			M	60.1 61.2			L	60.1 61.2						
		S	59.3 62.5	N	59.3 62.5			L	61.5 64.8			L	64.8 66.6			M	64.8 66.6			L	64.8 66.6						
				M	62.5 72.8			L	64.8 66.6			L	66.6 71.0			L	66.6 71.0			L	66.6 71.0						
				N	72.8 76.5			L	71.0 76.5			L	71.0 76.5			L	71.0 76.5			L	71.0 76.5						
				L	72.8 76.5			L	71.0 76.5			L	71.0 76.5			L	71.0 76.5			L	71.0 76.5						
48a	39.6	H	0.0 2.6	N	0.0 2.6			3	N	0.0 1.2	RES		N	0.0 2.6			L	0.0 2.6	C	M	0.0 1.2						
				M	2.6 6.5			1	M	1.2 1.7	RES-H		N	1.2 1.7			M	1.2 1.7	B	M	1.2 1.7						
				M	4.4 4.7			1	M	1.7 2.6	RES		N	1.7 2.6			M	1.7 2.6	B	M	1.7 2.6						
				N	4.7 5.8			1	M	2.6 3.3	RES		N	2.6 6.5			M	2.6 4.4			M	2.6 4.4					
		H	6.5 26.3	N	5.8 6.5			1	M	3.3 6.1	RES-C		N	3.3 6.1			M	6.1 6.5			M	6.1 6.5					
				M	6.5 7.5			1	M	6.1 6.5	RES-C		N	6.1 6.5			M	6.1 6.5			M	6.1 6.5					
				N	7.5 8.7	1-B		1	L	8.2 11.5			L	8.2 11.5			M	6.5 11.3			M	6.5 11.3					
				M	8.7 11.2			1	L	11.2 11.5	RES-B	RES-B	M	6.5 26.3			M	11.3 12.5			M	11.3 12.5					
		S	26.3 27.1	N	11.2 11.5			1	M	11.5 12.7			L	11.5 12.7			M	12.5 26.3			M	12.5 26.3					
				M	11.5 12.5	1-C		1	M	12.7 26.3			L	12.7 26.3			M	11.5 12.5			M	11.5 12.5					
				N	12.5 26.3				N	26.3 27.1			M	26.3 27.1			M	12.5 26.3			M	12.5 26.3					
				L	26.3 27.1				L	27.1 27.3			M	27.1 31.3			L	27.1 30.0			L	27.1 30.0					
48b	8.4	H	0.0 8.4	N	27.1 33.1				M	27.3 30.3			M	31.3 32.5			M	30.0 33.1	B	L	30.0 32.5						
				M	33.1 33.7				M	30.3 31.2			M	32.5 33.1	GR		M	32.5 33.1			M	32.5 34.1					
				N	33.7 34.9				M	31.2 32.7	LOC-B		L	32.7 33.1			M	33.1 33.7			M	33.1 34.1					
				M	34.9 38.0				L	33.1 33.7			L	33.1 33.7			M	33.7 47.1			M	33.7 34.1					
		H	0.0 8.0	N	33.7 34.9				M	33.7 36.3	RES, LOC-A, H		N	33.7 47.1			M	33.4 33.7			M	33.4 33.7					
				M	34.9 38.0				L	36.3 38.2			L	33.7 34.1			M	33.7 34.1			M	33.7 34.1					
				N	38.0 42.0				M	38.2 40.5	LOC-H		M	34.1 36.3			M	34.1 36.3			M	34.1 36.3					
				L	42.0 47.0				M	40.5 47.1	LOC-H, US70-H		L	36.3 36.6			M	36.3 36.6			M	36.3 36.6					
		S	17.6 19.2	N	47.0 47.1				N	0.0 1.5	RES-B		N	0.0 8.0			L	0.0 5.4	C	M	0.0 1.5						
				M	0.0 5.9				M	1.5 4.2	RES-B, P		N	5.4 8.0			M	5.4 8.0	B	M	1.5 4.2						
				N	5.9 8.0				N	4.2 5.0	RES-B		N	8.0 10.3			M	8.0 10.3	B	M	4.2 8.0						
				L	8.0 10.3				N	5.0 8.0			N	10.3 11.3			M	8.0 10.3	B	M	8.0 8.4						
48c	9.1	H	0.0 9.1	N	10.3 12.2				N	10.3 11.3			N	10.3 16.7			M	10.3 17.6	B	M	8.4 17.6						
				M	12.2 14.9				M	11.3 15.0			L	16.7 17.6			M	10.3 17.6	B	M	8.4 17.6						
				N	14.9 16.3				L	15.0 16.9			L	16.7 17.6			M	10.3 17.6	B	M	8.4 17.6						
				M	16.3 17.1				L	16.9 17.6			L	16.9 17.6			M	10.3 17.6	B	M	8.4 17.6						
		H	17.6 19.2	N	17.1 17.6				M	17.1 17.6			M	17.6 18.9			M	17.6 18.9			M	17.6 18.9					
				M	17.6 18.9				M	18.9 19.1			M	18.9 19.2			M	17.6 19.2	B	M	17.6 19.2						
				N	18.9 19.1				M	19.1 19.2			M	19.1 19.2			M	17.6 19.2	B	M	17.6 19.2						
				L	19.1 19.2				M	19.2 20.4	5-C		H	19.2 20.4			M	19.2 20.4	B	M	19.2 20.4						
		S	20.4 21.1	N	19.2 20.4				H	19.2 20.4	RES-C		N	19.2 20.4			M	19.2 20.4	B	M	19.2 20.4						
				M	20.4 21.1	5-C		H	20.4 21.1	RES/REC-C, H		M	20.4 21.1			M	20.4 21.1	B	M	20.4 21.1							
				N	21.1 21.3	5-C		H	21.1 21.3			M	21.1 21.3			M	21.1 21.3	B	M	21.1 21.3							
				L	21.3 24.7				M	21.1 28.8	US180-A, P, H		N	21.6 30.8			M	21.1 30.8	B	M	21.1 30.8						
48d	8.4	H	0.0 8.4	N	24.7 27.0				L	28.8 30.8			M	30.8 32.2			M	30.8 32.2	B	M	28.8 30.8						
				M	27.0 30.8				L	30.8 31.6			M	30.8 32.2			M	30.8 32.2	B	M	30.8 32.2						
				N	30.8 32.0				M	31.6 32.2			M	32.2 33.1			M	32.2 33.1	B	M	32.2 33.1						
				M	32.2 33.1				L	32.2 33.1			M	32.2 33.1			M	32.2 33.1	B	M	32.2 33.1						
		H	0.0 9.1	N	32.2 33.1				M	32.2 33.1			M	32.2 33.1			M	32.2 33.1	B	M	32.2 33.1						
				M	33.1 35.9				M	33.1 35.3			M	33.1 35.9			M	33.1 35.9	B	M	33.1 35.9						
				N	35.9 39.6				M	35.3 35.9	US180	US180	M	35.9 39.0			M	35.9 39.2	B	M	35.9 39.2						
				L	39.6 39.6				M	35.9 39.6	US180-A, P, H		N	39.0 39.6	ACDT		L	39.2 39.6	C	M	39.2 39.6						
		S	20.4 21.1	N	35.9 38.4				M	35.9 38.4			M	35.9 39.0			M	35.9 39.0	B	M	35.9 39.0						
				M	38.4 39.2				M	39.0 39.6			M	39.0 39.6			M	39.0 39.6	B	M	39.0 39.6						
				N	39.2 39.6				M	39.0 39.6			M	39.0 39.6			M	39.0 39.6	B	M	39.0 39.6						
				L	39.6 39.6				M	39.0 39.6			M	39.0 39.6			M	39.0 39.6	B	M	39.0 39.6						
48e	9.1	H	0.0 9.1	N	0.0 2.7				M	0.0 0.3	US180	US180	M	0.0 0.4			L	0.0 0.4	C	M	0.0 0.4						
				M	2.7 4.9	NT, 3		L	0.3 0.8			M	0.4 2.0	ACDT-H	ACDT	M	0.4 2.0			M	0.4 2.0						
				N	4.9 8.4				M	0.8 2.5			M	2.0 2.4			M	2.0 2.4			M	2.0 2.					

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LINK	LENGTH (MILES)	CONTRAST		RESIDENCES				TRAVEL ROUTES				PARKS / RECREATION		LANDSCAPE AESTHETICS		OVERALL VISUAL IMPACTS					LINK				
		LEVEL	MILEPOST		IMPACT	MILEPOST		VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST		VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST		CLASS	INITIAL IMPACT	MILEPOST		MITIGATION		CONDITIONAL MITIGATION	RESIDUAL IMPACT	SIGNIFICANCE	
			BEGIN	END		BEGIN	END			BEGIN	END			BEGIN	END			BEGIN	END						BEGIN
27	29.4	M	19.6	26.6	M	19.6	20.6	1	1	L	19.6	20.5	FS139-H	FS139	N	19.6	26.6	H	14.0	16.4	1, 8, 12	H	Y	27	
					H	20.6	22.1			M	20.5	22.1				H	16.4	17.1	17.1	17.3					
					N	22.1	24.9			L	22.1	26.6				H	17.1	17.3	17.3	19.6					
					L	24.9	26.6			M	24.9	26.6				H	19.6	19.6	19.6	20.6					
		S	26.6	28.1	L	26.6	26.9	3-C	H	N	26.6	27.0	RES-C	NY142	N	26.6	28.1	H	26.6	27.2	4	H	Y		
					H	26.9	28.1			M	27.0	28.1				H	27.2	28.1	28.1	28.4					
					N	28.1	30.0			L	28.1	30.0				H	28.1	28.4	28.4	31.5					
					L	30.0	31.5			M	30.0	31.5				H	28.4	31.5	31.5	31.5					
		M	0.0	2.3	N	0.0	2.3	2-C	M	L	0.0	1.7	NY52-B	NY52-B	N	0.0	2.3	H	0.0	2.3	4	H	Y		
					H	2.3	9.1			L	1.7	2.3				H	2.3	10.0	9.1	10.0					
					N	9.1	9.9			M	2.3	9.5				H	9.1	10.0	10.0	11.0					
					L	9.9	10.0			L	9.5	10.0				H	10.0	11.0	11.0	13.0					
		S	10.0	11.0	N	10.0	11.0	NY52	M	L	10.0	11.0	NY52-C	NY52-B	N	10.0	11.0	H	10.0	11.0	2	H	Y		
					H	11.0	13.0			L	11.0	11.5				H	11.0	13.0	11.0	13.0					
					N	11.0	11.5			M	11.5	12.1				H	11.0	13.0	13.0	15.5					
					L	12.1	13.0			L	12.1	13.0				H	13.0	15.5	15.5	22.5					
28	7.3	M	0.0	3.3	L	0.0	3.3	1	1	L	0.0	1.9	RES	RES	N	0.0	3.3	L	0.0	3.3	4	H	Y	28	
					H	3.3	24.6			M	22.5	29.0				H	22.5	29.4	22.5	25.0					
					N	24.6	25.7			L	25.0	26.0				H	25.0	26.0	25.0	26.0					
					L	25.7	26.0			M	26.0	29.4				H	26.0	29.4	26.0	29.4					
		S	3.3	4.0	H	3.3	4.0	3	7	L	0.0	1.9	NY52-H	LOC	N	0.0	3.3	L	0.0	3.3	12	H	Y		
					N	4.0	7.3			M	1.9	3.3				H	3.3	4.0	3.3	4.0					
					L	4.0	7.3			L	4.0	4.5				H	4.0	7.3	4.0	4.5					
					M	4.5	7.3			M	4.5	7.3				H	4.5	7.3	4.5	7.3					
		M	0.0	3.6	N	0.0	2.7	3	H	L	0.0	2.8	RES-N,C	N	N	0.0	3.6	L	0.0	2.4	4	H	Y		
					H	2.7	3.6			M	2.8	3.6				H	2.4	3.6	2.4	2.8					
					N	3.6	6.1			L	3.6	6.1				H	3.6	6.1	3.6	6.1					
					L	6.1	9.2			M	6.1	9.2				H	6.1	9.2	6.1	9.2					
30	9.2	M	0.0	1.4	N	0.0	1.4	N	N	L	0.0	1.4	NY90	NY90	N	0.0	1.4	L	0.0	1.4	4	H	Y	30	
					H	1.4	2.8			M	1.4	2.8				H	1.4	2.8	1.4	2.8					
					N	2.8	3.8			L	2.8	3.8				H	2.8	3.8	2.8	3.8					
					L	3.8	5.3			M	3.8	5.3				H	3.8	5.3	3.8	5.3					
		S	5.3	6.8	N	5.3	6.8	N	L	L	5.3	6.8	NY90	NY90	N	5.3	6.8	L	5.3	6.8	4, 8, 12	H	Y		
					H	6.8	7.3			M	6.8	7.3				H	6.8	7.3	6.8	7.3					
					N	7.3	8.2			L	7.3	8.2				H	7.3	8.2	7.3	8.2					
					L	8.2	8.5			M	8.2	8.5				H	8.2	8.5	8.2	8.5					
		M	8.5	9.2	N	8.5	9.2	N	L	L	8.5	9.2	NY90	NY90	N	8.5	9.2	L	8.5	9.2	4, 8, 12	H	Y		
					H	9.2	9.2			M	9.2	9.2				H	9.2	9.2	9.2	9.2					
					N	9.2	9.2			L	9.2	9.2				H	9.2	9.2	9.2	9.2					
					L	9.2	9.2			M	9.2	9.2				H	9.2	9.2	9.2	9.2					
31	7.2	M	0.0	6.5	N	0.0	6.5	N	L	L	0.0	3.8	NY90	NY90	N	0.0	6.5	L	0.0	0.7	8, 12	H	Y	31	
					H	6.5	7.2			M	3.8	5.9				H	0.7	3.0	0.7	3.0					
					N	7.2	7.2			L	5.9	6.5				H	3.0	6.1	3.0	6.1					
					L	7.2	7.2			M	6.5	6.7				H	6.1	6.5	6.1	6.5					
		S	6.5	7.2	N	6.5	7.2	N	L	L	6.5	6.7	NY90	NY90	N	6.5	7.2	L	6.5	7.2	4	H	Y		
					H	7.2	7.2			M	6.7	7.2				H	7.2	7.2	7.2	7.2					
					N	7.2	7.2			L	7.2	7.2				H	7.2	7.2	7.2	7.2					
					L	7.2	7.2			M	7.2	7.2				H	7.2	7.2	7.2	7.2					
		M	0.0	0.5	N	0.0	0.5	N	L	L	0.0	0.5	NY90	NY90	N	0.0	0.5	L	0.0	0.5	4, 8, 12	H	Y		
					H	0.5	1.0			M	0.5	1.0				H	0.5	1.0	0.5	1.0					
					N	1.0	1.3			L	1.0	1.3				H	1.0	1.3	1.0	1.3					
					L	1.3	6.5			M	1.3	6.5				H	1.3	6.5	1.3	6.5					
32	28.1	S	0.0	0.5	N	0.0	0.5	N	L	L	0.0	0.5	NY90	NY90	N	0.0	0.5	L	0.0	0.5	4	H	Y	32	
					H	0.5	1.0			M	0.5	1.0				H	0.5	1.3	0.5	1.3					
					N	1.0	1.3			L	1.0	1.3				H	1.3	1.9	1.3	1.9					
					L	1.3	6.5			M	1.3	6.5				H	1.9	4.8	1.9	4.8					
		M	6.5	6.7	N	6.5	6.7	1	M	L	6.5	6.7	NY90	NY90	N	6.5	6.7	L	6.5	6.7	4, 8, 12	H	Y		
					H	6.7	6.9			M	6.7	6.9				H	6.7	6.9	6.7	6.9					
					N	6.9	7.3			L	6.9	7.3				H	6.9	7.3	6.9	7.3					
					L	7.3	7.7			M	7.3	7.7				H	7.3	7.7	7.3	7.7					
		S	7.3	7.7	N	7.3	7.7	2	M	L	7.7	8.4	RES	RES	N	7.7	8.4	L	7.7	8.4	4, 8, 12	H	Y		
					H	7.7	8.4			M	7.7	8.4				H	7.7	8.4	7.7	8.4					
					N	8.4	9.0			L	8.4	9.0				H	8.4	9.0	8.4	9.0					
					L	9.0	10.3			M	9.0	9.3				H	9.0	9.3	9.0	9.3					
		M	10.3	11.0	N	10.3	11.0	2	M	L	9.3	9.9	NY27, RES	NY27, RES	N	9.3	9.9	L	9.3	9.9	4, 8, 12	H	Y		
					H	9.9	10.3			M	9.9	10.3				H	9.9	10.3	9.9	10.3					
					N	10.3	11.0			L	10.3	11.0				H	10.3	11.0	10.3	11.0					
					L	11.0	13.5			M	11.0	13.5				H	11.0	13.5	11.0	13.5					
33	25.1	M	0.0	6.9	N	0.0	6.9	4	H	L	0.0	1.1	RES-R,H	RES	N	0.0	6.9	L	0.0	1.1	12	H	Y	33	
					H	6.9	11.1			M	1.1	4.4				H	1.1	7.1	1.1	7.1					
					N	11.1	14.7			L	4.4	7.1				H	7.1	7.7	7.1	7.7					
					L	14.7	14.7			M	7.1	7.7				H	7.7	7.7	7.7	7.7					

LINK	LENGTH (MILES)	CONTRAST		RESIDENCES				TRAVEL ROUTES				PARKS / RECREATION				LANDSCAPE AESTHETICS				OVERALL VISUAL IMPACTS						LINK	
		LEVEL	MILEPOST BEGIN END	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST BEGIN END	CLASS	INITIAL IMPACT	MILEPOST BEGIN END	MITIGATION	CONDITIONAL MITIGATION	RESIDUAL IMPACT	SIGNIFICANCE						
		S	10.2 13.7	N	4.1 4.7			N	5.5 10.2			H	9.9 10.2	GCDT		H	10.0 10.2	A		L	5.5 7.9			L			
				L	4.7 4.9			N	10.2 13.7			H	10.2 11.2	GCDT-H		H	10.2 13.7	A		M	7.9 9.9			M			
				N	4.9 10.2			N	13.7 10.0			H	13.0 13.7	GCDT		H	13.7 16.9	A		M	9.9 10.2			M			
				M	10.2 13.7			N	16.9 20.1	NYS2-H	NYS2	H	13.9 20.1			H	16.9 20.1	B		H	10.2 13.7	4,6,12			H	V	
19a	4.8	S	0.0 1.3	N	0.0 1.3			L	0.0 1.3			N	0.0 1.3			H	0.0 1.3	B		M	0.0 2.2			4		N	
				L	1.3 2.2			L	1.3 1.6			H	1.3 2.2			H	1.3 2.2	B		H	1.3 2.2			4		N	
				N	2.2 2.5			M	1.6 2.2			H	2.2 3.3	2RES-H	NYS2	H	2.2 3.3	B		H	2.2 2.5			4,12		N	
				M	3.3 4.8			M	3.3 4.8	RES-C	NYS2	H	3.3 4.8			H	3.3 4.8	B		H	3.3 4.8			4,12		N	
19b	2.0	H	0.0 2.0	N	0.0 0.3			L	0.0 1.1			N	0.0 2.0			H	0.0 2.0	B		M	0.0 2.0			4		N	
				N	0.3 2.0			L	1.1 2.0			H	0.0 2.0			H	0.0 2.0	B		H	0.0 2.0			4		N	
				N	0.0 1.3			L	0.0 1.1			H	0.0 2.0			H	0.0 2.0	B		H	0.0 2.0			4		N	
				M	1.3 2.0			L	1.1 2.0			H	0.0 2.0			H	0.0 2.0	B		H	0.0 2.0			4		N	
20	4.2	H	0.0 2.0	N	0.0 1.3			L	0.0 1.1			N	0.0 2.0			H	0.0 2.0	B		M	0.0 2.0			4		N	
				N	1.3 2.0			L	1.1 2.0			H	0.0 2.0			H	0.0 2.0	B		H	0.0 2.0			4		N	
				M	2.0 4.2			L	2.0 2.6			H	2.0 4.2			H	2.0 2.6	B		H	2.0 2.6			2,4,12		N	
				N	2.0 4.2			L	2.6 3.4			H	2.0 4.2			H	2.0 2.6	B		H	2.0 2.6			2,4,12		N	
21	7.5	S	0.0 3.3	N	0.0 3.3			L	0.0 1.1			N	0.0 3.3			H	0.0 3.3	B		M	0.0 3.3			4,8		N	
				N	3.3 6.7			L	3.3 5.9			H	3.3 6.7			H	3.3 6.7	B		H	3.3 6.7			4,8		N	
				M	6.7 7.5			L	6.7 7.5			H	6.7 7.5			H	6.7 7.5	B		H	6.7 7.5			4,8		N	
				N	6.7 7.5			L	6.7 7.5			H	6.7 7.5			H	6.7 7.5	B		H	6.7 7.5			4,8		N	
22	5.0	S	0.0 1.1	N	0.0 1.1			L	0.0 0.3			N	0.0 1.1			H	0.0 1.1	B		M	0.0 1.1			4,8		N	
				N	1.1 5.0			L	0.3 1.1			H	0.0 1.1			H	0.0 1.1	B		M	0.0 1.1			4,8		N	
				M	5.0 6.7			L	1.1 2.3			H	0.0 1.1			H	0.0 1.1	B		M	0.0 1.1			4,8		N	
				N	6.7 7.5			L	2.3 3.3			H	0.0 1.1			H	0.0 1.1	B		M	0.0 1.1			4,8		N	
23	3.5	H	0.0 3.5	N	0.0 3.5			L	0.0 0.8			N	0.0 3.5			H	0.0 3.5	B		M	0.0 3.5			2		N	
				N	3.5 6.7			L	0.8 2.2			H	0.0 3.5			H	0.0 3.5	B		M	0.0 3.5			2		N	
				M	6.7 7.5			L	2.2 3.5			H	0.0 3.5			H	0.0 3.5	B		M	0.0 3.5			2		N	
				N	7.5 10.2			L	0.0 1.5			H	0.0 3.5			H	0.0 3.5	B		M	0.0 3.5			2		N	
24	7.9	S	0.0 2.0	N	0.0 1.7			L	1.5 2.0			N	0.0 2.0			H	0.0 2.0	B		M	0.0 1.5			4		N	
				N	1.7 2.0			L	1.5 2.0			H	0.0 2.0			H	0.0 2.0	B		M	0.0 1.5			4		N	
				M	2.0 2.6			L	2.0 2.6			H	0.0 2.0			H	0.0 2.0	B		M	0.0 1.5			4		N	
				S	2.6 7.9			L	2.6 7.9			H	0.0 2.0			H	0.0 2.0	B		M	0.0 1.5			4		N	
25	19.5	H	0.0 4.6	N	0.0 4.6			L	0.0 4.6			N	0.0 4.6			H	0.0 4.6	B		M	0.0 4.6			2		N	
				N	4.6 6.2			L	4.6 6.2			H	0.0 4.6			H	0.0 4.6	B		M	0.0 4.6			2		N	
				M	6.2 10.5			L	6.2 10.5			H	0.0 4.6			H	0.0 4.6	B		M	0.0 4.6			2		N	
				S	10.5 11.4			L	10.5 11.4			H	0.0 4.6			H	0.0 4.6	B		M	0.0 4.6			2		N	
26	31.5	S	0.0 10.7	N	0.0 3.0			L	0.0 1.0			N	0.0 10.7			H	0.0 10.7	B		M	0.0 10.7			4		N	
				N	3.0 3.3			L	1.0 3.0			H	0.0 10.7			H	0.0 10.7	B		M	0.0 10.7			4		N	
				M	3.3 10.7			L	3.0 3.3			H	0.0 10.7			H	0.0 10.7	B		M	0.0 10.7			4		N	
				N	10.7 11.2			L	3.3 10.7			H	0.0 10.7			H	0.0 10.7	B		M	0.0 10.7			4		N	

LINE	LENGTH (MILES)	CONTRAST			RESIDENCES			TRAVEL ROUTES			PARKS / RECREATION			LANDSCAPE AESTHETICS			OVERALL VISUAL IMPACTS					LINK						
		LEVEL	MILEPOST BEGIN	END	IMPACT	MILEPOST BEGIN	END	VISIBILITY THRESHOLD HIGH	MOD.	IMPACT	MILEPOST BEGIN	END	VISIBILITY THRESHOLD HIGH	MOD.	IMPACT	MILEPOST BEGIN	END	CLASS	INITIAL IMPACT	MILEPOST BEGIN	END		MITIGATION	CONDITIONAL MITIGATION	RESIDUAL IMPACT	SIGNIFICANCE		
10b	4.0	S	0.0	2.9	N	0.0	2.9			H	0.0	0.6	NH12		N	0.0	1.2	B	H	0.0	0.6		4,7	H		10b		
		H	2.9	4.0	N	2.9	3.3	1-D	H	2.9	4.0	RES-D		H	1.2	1.5	ACDT	H	0.9	2.9	C	H	0.6	1.5	7			
		N				3.3	3.6																					
		N				3.6	4.0																					
10c	1.9	H	0.0	1.9	N	0.0	1.9			H	0.0	1.9	RES-A,H		N	0.0	1.9	C	H	0.0	1.9		7,12	H		10c		
11a	0.4	H	0.0	0.4	N	0.0	0.4			H	0.0	0.4	NH12-B	NH12-B	N	0.0	0.4	C	H	0.0	0.4		4,7	L		11a		
11b	1.8	H	0.0	0.2	N	0.0	0.2			H	0.0	0.2			N	0.0	0.2	B	H	0.0	0.2		7	H		11b		
		S	0.2	1.4	N	0.2	1.4			H	0.2	1.4	RES-C,H		N	0.2	1.4	B	H	0.2	1.4		4,7,12	H				
		H	1.4	1.8	N	1.4	1.8			H	1.4	1.8	RES-H		N	1.4	1.8	C										
12	4.0	H	0.0	4.0	N	0.0	3.4			3	H	0.0	1.1	NH12-B		N	0.0	4.0	L	H	0.0	1.1		12	H		12	
		L			L	3.4	4.0			H	1.1	3.3	RES-A,H		L	3.6	4.0	B	H	1.1	3.3		12	H				
13	2.6	H	0.0	2.6	N	0.0	1.4			H	0.0	2.6	RES-B	RES-B	N	0.0	2.6	C	H	0.0	2.6			H		13		
		L			L	1.4	2.6																					
14	7.3	H	0.0	7.3	L	0.0	0.6			3	L	0.0	0.3	FS28-H		L	0.0	7.3	B	H	0.0	7.3		12	H		14	
		N			N	0.6	3.0			H	0.3	2.3	FS28-H	FS28	N	0.3	2.3											
		L			L	3.0	4.3			L	2.3	7.3																
15	33.9	H	0.0	8.7	L	0.0	5.8			L	0.0	5.8			L	0.0	4.2	B	H	0.0	8.7			H		15		
		N			N	5.8	8.7			N	5.8	8.7			N	4.2	8.7		H	8.7	18.1			H				
		S	8.7	18.1	N	8.7	18.1			N	8.7	18.1			N	8.7	18.1		H	8.7	18.1			H				
		H	18.1	21.8	N	18.1	21.8			N	18.1	21.8			N	18.1	21.8	C	H	18.1	21.8		4	H				
		N	21.8	24.5	N	21.8	24.5			N	21.8	24.5			N	21.8	24.5	C	L	18.1	21.8			L				
		H	24.5	30.7	N	24.5	30.7			N	23.9	24.5			N	23.9	24.5	C	H	23.9	24.5			H				
		S	30.7	32.3	N	30.7	32.3			N	24.5	25.6	NH78-B		L	24.5	29.5	C	H	24.5	29.5		4	H				
		H	32.3	33.5	N	32.3	33.5			N	25.6	30.7	NH78-A,H		N	29.5	30.7	B	L	25.6	26.0			L				
		S	33.5	33.9	N	33.5	33.9			N	30.2	30.7	NH78		H	26.0	30.7		H	26.0	30.7		7,12	H				
		H			N	30.7	32.3			N	30.7	31.2			N	30.7	32.3		H	30.7	32.3		4,7	H				
16	38.1	S	0.0	4.2	N	0.0	4.2			L	0.0	0.5	RES-B		N	0.0	4.2	B	H	0.0	0.5		5	H		16		
		L			L	0.5	1.8			N	0.5	1.8			H	1.8	4.2	B	N	0.5	1.8		5	L				
		N			N	1.8	4.2			N	1.8	4.2	RES-B		H	4.2	9.1	B	N	1.8	4.2		4,6	H				
		H	4.2	9.1	N	4.2	4.6			2	L	4.6	5.4	FS47,RES		N	4.2	9.1	B	H	4.2	9.1		12	H			
		L			L	4.6	5.4			L	5.4	7.0	FS28-B,P		N	5.4	7.0		H	4.2	9.1			H				
		N			L	5.4	7.0			H	5.4	7.0	FS47-B,H		N	7.0	9.1		H	7.0	9.1			H				
		S	9.1	10.3	L	9.1	10.3			M	9.1	10.3	FS28-B,P		N	9.1	10.3		H	9.1	10.3			H				
		H	10.3	13.1	N	10.3	13.1			M	10.3	13.1	FS28-B,P,H		N	10.3	13.1		H	10.3	13.1			H				
		N			N	12.5	13.1			3	H	13.1	15.0	FS551-C		N	13.1	15.0		H	13.1	15.0		4,12	H			
		S	13.1	18.5	N	13.1	13.8			N	15.0	16.0			N	15.3	17.2		H	13.1	18.5			H				
H			N	13.8	14.1			N	16.0	16.7	FS551		N	17.2	18.5	ACDT-H	H	13.1	18.5			H						
		N			N	16.7	18.5			N	16.7	18.5			H	18.5	19.8	ACDT-H	H	18.5	19.8			H				
		H	18.5	32.7	N	18.5	32.7			L	18.5	22.1	FS551-H		N	19.8	21.5		L	18.5	19.8			H				
		S			N	22.1	24.3			L	22.1	24.3			N	24.3	29.3		L	21.5	22.1		12	L				
		H			N	24.3	29.3			L	29.3	31.2	FS150		N	31.2	32.7	NH78-C,H	H	22.1	24.3			L				
		N			N	31.2	32.7			H	31.2	32.7			N	32.7	34.2	NH78-C	L	24.3	31.2		4,12	L				
		S	32.7	34.2	N	32.7	34.2			H	34.2	34.5	NH78-B		N	34.2	34.5		H	34.2	34.5			L				
		H	34.2	35.1	N	34.2	35.1			L	34.5	35.1			N	35.1	36.3	NH78-B	H	34.2	35.1			L				
		S	35.1	36.3	N	35.1	36.3			N	35.1	36.3			N	36.3	38.1	NH78-C	H	35.1	36.3		4	H				
		H	36.3	38.1	N	36.3	38.1			L	36.3	38.1			N	36.7	38.1	NH78-B	H	36.3	38.1			H				
17a	12.8	H	0.0	9.9	N	0.0	9.9			L	0.0	6.0	RES-C,H	NH78	N	0.0	7.0		L	0.0	6.0			L		17a		
		S			N	6.0	7.5			H	6.0	7.5			N	7.0	9.9		H	6.0	7.5		2,12	L				
		H			N	7.5	9.9			N	7.5	9.9			H	8.7	9.9	GCOT	H	7.5	9.9		2	H				
		S	9.9	12.8	N	9.9	12.8			N	9.9	12.8			H	9.9	10.6	GCOT-H	H	9.9	12.8		4,6,7	H				
		H			N	10.6	11.5			N	10.6	11.5			N	11.5	11.8		H	9.9	12.8			H				
		S			N	11.5	11.8			N	11.8	12.5			N	12.5	12.8		H	11.5	11.8			H				
17b	4.8	S	0.0	3.6	N	0.0	3.6			N	0.0	3.6			N	0.0	3.6		H	0.0	3.6		1,6,7	4	H		17b	
		H			N	3.6	4.8			N	3.6	4.8			H	0.6	3.6	B	H	3.6	4.8		2	H				
17c	4.8	S	0.0	1.2	N	0.0	1.2			N	0.0	1.2			N	0.0	1.2		H	0.0	1.2		4	H		17c		
		H			N	1.2	4.8			N	1.2	4.8			H	0.7	1.2	B	H	1.2	4.8		2	H				
18	20.1	H	0.0	10.2	N	0.0	3.7			L	0.0	4.0			N	0.0	9.3		L	0.0	4.0			L		18		
		L			L	3.7	4.1			H	4.0	5.5	RES-C,H		N	9.3	9.9		H	4.0	5.5		2,12	L				

LINK	LENGTH (MILES)	CONTRAST		RESIDENCES				TRAVEL ROUTES				PARKS / RECREATION				LANDSCAPE AESTHETICS				OVERALL VISUAL IMPACTS				LINK
		LEVEL	MILEPOST BEGIN END	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST BEGIN END	CLASS	INITIAL IMPACT	MILEPOST BEGIN END	MITIGATION	CONDITIONAL MITIGATION	RESIDUAL IMPACT	SIGNIFICANCE			
5	11.4	M	0.0 11.4	L	0.0 0.3		1	L	6.3 9.7	US60	US60, RES	N	0.0 11.4	L	0.0 8.0	B	L	6.3 9.7	2.3, 9	4	L	5		
				H	0.3 0.7			M	1.1 7.3	RES	L						0.0 7.6	2.3, 9	6	L				
				N	0.7 9.0			L	7.3 10.5	FS205-H	M						7.6 8.7	2.6, 7.9	L					
				L	9.0 9.2			N	10.5 11.4	FS205	H						8.7 9.2	2.6, 7.9	L					
				N	9.2 9.6						L						9.2 11.4	2.6, 7.9						
6	16.7	M	0.0 6.0	L	0.0 0.5	1	L	0.0 1.4		RES	N	0.0 6.0	L	0.0 6.0	C	L	0.0 5.0	12		L	6			
				H	0.5 6.0		L	1.4 4.6	FS19	L						5.0 7.0		L						
				N			M	4.6 5.0	FS19	M						6.0 6.3		L						
					N		5.0 6.0	FS19-H	N	6.0 6.3							L							
					H		6.0 7.0	FS19-H	N	6.3 8.7							L							
					N			FS19	N								L							
					L		7.0 8.4	FS23	N								L							
					H		8.4 8.7	FS23	N								L							
					N			FS23	N								L							
					M		8.7 8.9	FS23	N								L							
	H	8.9 12.5	FS23-R, B, P, H	N			L																	
7	11.4	S	0.0 11.4	N	0.0 3.3	2	N	0.0 0.7		FS19-B	N	0.0 11.4	H	12.5 15.4	B	H	12.5 15.2	6.7, 12		N	7			
				H	3.3 4.7		L	0.7 1.4	FS19-B	H						15.2 15.7	5, 12	L						
					L		1.4 4.2	FS19-B, H, RES-P, H	H	15.7 16.2						8	6	L						
					N			FS216	H	16.2 16.7						8	6	L						
					L		4.7 4.9																	
					H		4.9 5.0																	
					L		5.0 5.1																	
					N		5.1 11.4																	
					N																			
					H																			
8a	2.3	S	0.0 2.3	N	0.0 1.4	1-C	N	0.0 0.6	FS23	N	0.0 2.3	L	0.0 0.6	C	N	0.0 0.6	4.6, 7, 12		N	8a				
H	1.4 2.3	H	0.6 2.3	FS23-R, H	H		0.6 2.3		N															
8b	2.5	S	0.0 2.5	N	0.0 0.4	2	N	0.0 1.5	FS23/NH32-B	N	0.0 2.5	H	0.0 0.4	B	N	0.0 1.5	5	6	N	8b				
	N	0.4 2.5	H	1.5 2.0	NH32-H		H	0.4 0.7	5, 12						6	N								
8c	3.0	S	0.0 0.6	N	0.0 0.6		N	0.0 0.6	FS23-B	N	0.0 0.6	H	0.0 0.6	B	N	0.0 0.6	4		N	8c				
				H	0.6 1.2		M	0.6 1.2	L						0.6 1.2	12		N						
				S	1.2 1.4		N	1.2 1.4	NH32, FS23						M	1.2 1.4	4		N					
				H	1.4 3.0		N	1.4 1.6	NH32, FS23						N	1.4 3.0	12		N					
8d	11.7	S	0.0 5.5	N	0.0 1.1	2-C	N	0.0 0.2	NH32-B	N	0.0 5.5	H	0.0 2.6	B	N	0.0 2.6	4.6, 7, 12		N	8d				
				H	1.1 1.2		M	0.2 0.7	NH32						H	2.6 5.5	C	N	2.6 5.5		4.6, 7		N	
				N	1.2 5.5		N	0.7 1.3	RES-C, H															
					N		1.5 5.5																	
					N		5.5 9.5																	
					H		9.5 10.0	RES-B	N						5.5 11.7									
					N		10.4 10.8																	
					H		10.8 11.7																	
					N																			
					L																			
9a	1.5	M	0.0 1.5	N	0.0 1.5		N	0.0 1.5			N	0.0 1.5	L	0.0 1.5	C	L	0.0 1.5		L	9a				
9b	2.0	M	0.0 2.0	N	0.0 2.0		N	0.0 2.0	NH12-B	N						0.0 2.0		L	0.0 2.0			N	9b	
9c	4.0	M	0.0 4.0	N	0.0 2.5	1-B	N	0.0 3.5	NH12-A	N	0.0 4.0	H	0.0 2.5	B	H	0.0 3.5	7, 12		N	9c				
				H	2.5 3.4		N	3.5 4.0	NH12-B						N	3.5 4.0		N						
				L	3.4 4.0																			
9d	1.0	S	0.0 1.0	N	0.0 1.0		N	0.0 1.0		NH12-B	N	0.0 0.5	H	0.0 1.0	B	H	0.0 1.0	7, 12		N	9d			
9e	2.6	M	0.0 2.6	N	0.0 0.4	1	N	0.0 1.5		NH12-B	N	0.0 0.5	H	0.0 2.6	B	H	0.0 2.1	7, 12		N	9e			
9f	2.9	M	0.0 1.8	N	0.0 1.8		N	0.0 1.8			N	0.0 0.6	H	0.0 2.9	B	H	0.0 2.9	4.7, 12		N	9f			
9g	2.4	M	0.0 0.5	N	0.0 0.5		N	0.0 0.5	RES-R, D	N	0.0 0.5	H	0.0 0.5	C	L	0.0 0.5	4.7, 12		L	9g				
				H	0.5 1.5		N	0.5 1.5	NH12-C, H						L	0.5 1.5		N						
				S	1.5 2.4		N	1.5 2.4	NH12-B						H	1.5 2.4		N						
10a	2.3	S	0.0 2.2	N	0.0 2.2		N	0.0 0.7		NH12	N	0.0 1.2	H	0.0 0.9	C	H	0.0 0.9	4.7		N	10a			
				H	0.7 0.9		N	1.2 1.9	PCDT	H						0.9 1.7	4, 12		N					
				L	0.9 1.2		N	1.2 1.9		H						1.7 2.2		N						
				H	2.2 2.3		NH12	L	2.2 2.3							H			N					

LINK	LENGTH (MILES)	CONTRAST		RESIDENCES				TRAVEL ROUTES				PARKS/RECREATION				LANDSCAPE AESTHETICS				OVERALL VISUAL IMPACTS						LINK
		LEVEL	MILEPOST BEGIN END	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST BEGIN END	VISIBILITY THRESHOLD HIGH MOD.	IMPACT	MILEPOST BEGIN END	CLASS	INITIAL IMPACT	MILEPOST BEGIN END	MITIGATION	CONDITIONAL MITIGATION	RESIDUAL IMPACT	SIGNIFICANCE					
48.3	38.8	M	0.0 36.5	N	0.0 5.0		N	0.0 0.4		N	0.0 10.7		L	0.0 36.5	C	L	0.0 0.4									
				M	5.0 7.3	1	M	0.4 0.8	LOC	L	10.7 18.2		M	0.4 2.3		M	0.4 2.3									
				N	7.3 9.4		M	0.8 1.3	LOC-H	L	18.2 23.9		L	2.3 5.6		M	2.3 5.6									
				N	9.4 10.5		M	1.3 2.3	LOC	L	23.9 28.3		M	5.6 9.1		M	5.6 9.1		4, 12		M					
				N	10.5 12.0	2-B	M	2.3 6.6		L	28.3 29.5		M	7.6 10.9		M	7.6 10.9		2, 8, 12		M					
				N	12.0 20.4		M	6.6 7.6	LOC	N	29.5 36.5		M	10.9 20.4		M	10.9 20.4		2		M					
				N	20.4 22.7	4	M	7.6 10.8	LOC-H, RES-P				M	20.4 22.7		M	20.4 22.7		2		H	Y				
				N	22.7 29.3		M	10.8 12.3	RES				M	22.7 28.5		M	22.7 28.5		2		M					
				N	27.3 29.0	1	L	12.3 20.1		US180			M	28.5 29.0		M	28.5 29.0		2, 12		M	Y				
				N	29.0 33.2		M	20.1 21.0	RES				M	29.0 34.0		M	29.0 34.0		2		M					
				N	33.2 34.7		M	21.0 21.7	RES-A, M				M	34.0 36.5		M	34.0 36.5		2		H	Y				
				N	34.7 35.2	2	M	21.7 22.7	RES																	
				N	35.2 36.2	11	L	22.7 27.4		US180																
				N	36.2 36.5	3	M	27.4 28.5	RES																	
				49	64.2	M	0.0 64.2	L	0.0 3.2		L	0.0 1.2	US70	M	0.0 33.0		L	0.0 32.3	C	L	0.0 10.2		2.9		L	
N	3.2 5.3	1	L					1.2 2.0	US70-A, H	M	33.0 37.3		L	10.2 10.7		M	10.2 10.7		2.9, 12		L					
L	5.3 18.2	2	M					6.0 6.6	NH464, US70	NH464, US70	L	37.3 37.5		L	10.7 14.9		L	10.7 14.9		2.9		L				
N	18.2 28.0		L					6.0 6.6	NH464-H		L	37.5 38.2		M	14.9 14.9		M	14.9 14.9		2.9, 12		L				
L	28.0 44.5	4	L					6.6 10.2	NH90, NH464	NH90, NH464	L	38.2 38.5		L	14.9 43.4		L	14.9 43.4		2.9		L				
N	44.5 55.3		M					10.2 10.7	NH90-A, H		M	38.5 38.8		M	43.4 46.8		M	43.4 46.8		2.9, 12		L				
L	46.5 60.4	1	L					10.7 14.3	NH90, RES	NH90, RES	N	38.8 39.0		L	46.5 50.3		L	46.5 50.3		2.9		L				
L	60.4 61.4	21	L					14.3 14.9	RES-A, H		L	39.0 41.7		M	50.3 50.9		M	50.3 50.9		2.9, 12		L				
L	61.4 64.2		M					14.9 29.0	LOC, RES	LOC, RES	N	41.7 42.0		L	50.9 61.4		L	50.9 61.4		2.9		L				
L	62.4 64.2		L					29.0 29.5	LOC-H	LOC, RES	L	42.0 42.8		M	61.4 62.4		M	61.4 62.4		2.9		L				
			L					29.5 43.4	RES	LOC, RES	N	42.8 57.7		L	62.4 64.2		L	62.4 64.2		2.9		L				
			M					43.4 44.5	RES-A, H																	
			L					44.5 45.4	RES																	
			M					45.4 46.0	RES-A, H																	
			L					46.0 50.3	RES																	
			M	50.3 50.9	RES-A, H																					
			L	50.9 63.6	RES/LOC-A	1-10																				
			L	63.6 64.2	LOC-H																					
50	0.9	M	0.0 0.9	L	0.0 0.9	DE	L	0.0 0.9	US180	L	0.0 0.9	DCP	L	0.0 0.9	C	L	0.0 0.9	2.9		L	50					
51	4.4	S	0.0 4.4	N	0.0 4.3	1-B	L	0.0 0.7	NH12	M	0.0 2.3	ACDT-H	M	0.0 0.9	C	M	0.0 0.7	4		M	51					
				N	4.3 4.4		M	0.7 4.4	NH12	M	2.3 3.7		M	0.9 4.4	B	M	0.7 4.4	4.7		M						
											3.7 4.4															
52	1.6	M	0.0 1.6	M	0.0 0.5	1	H	0.0 1.6	NH12-A, H, RES	N	0.0 1.6		M	0.0 1.6	C	M	0.0 1.6	12		M	52					
				N	0.5 1.6																					
53	2.5	M	0.0 2.1	M	0.0 2.1	1-B	M	0.0 2.1	RES, NH12-B	NH12	0.0 2.1		M	0.0 2.1	B	M	0.0 2.1			M	53					
		S	2.1 2.5	L	2.1 2.5		L	2.1 2.5	NH12-B	NH12-B	2.1 2.5		M	2.1 2.5	B	M	2.1 2.5	4		H	Y					
54	10.6	S	0.0 0.5	L	0.0 0.5		M	0.0 0.5	FS214-C		0.0 0.5		M	0.0 0.5	B	M	0.0 0.5	10	4	L	54					
		M	0.5 10.6	L	0.5 0.7		M	0.5 2.4	FS214-A, H	N	0.5 10.6		M	0.5 1.8	B	M	0.5 2.4	10	12	L						
				L	0.7 1.7	1-B	L	2.4 2.6					M	1.8 5.6	C	M	2.4 5.6			L						
				N	1.7 1.9		M	2.4 5.6	RES, NH12-H	FS214, RES-B			M	5.6 10.6	B	M	2.4 5.6	12		M						
				L	1.9 2.2		M	5.6 6.2					M			M	2.6 5.6			M						
				N	2.2 2.4		N	6.2 8.4									5.6 10.6			M						
				L	2.4 4.3	1-B	L	6.4 10.6																		
				M	4.3 5.6																					
				N	5.6 9.3																					
				L	9.3 10.6																					

TECHNICAL REPORT II ARIZONA INTERCONNECTION PROJECT BIOLOGICAL ASSESSMENT

INTRODUCTION

The following biological assessment is proposed and submitted to fulfill the requirements of the Endangered Species Act of 1974, as amended. In addition to animal species listed by the U.S. Fish and Wildlife Service (USFWS) and thought likely to occur within the proposed project area, this assessment includes species listed under the New Mexico Conservation Act which went into effect on July 1, 1974.

Letters requesting lists of federally listed threatened or endangered and proposed species were sent to the USFWS in Albuquerque on July 3, 1986 (letter sent by WIRTH Environmental Services) and July 9, 1986 (letter sent by E. Linwood Smith & Associates). A response was received on August 12, 1986. A similar letter was sent to the State of New Mexico, Department of Game and Fish by WIRTH and by E. Linwood Smith & Associates (the latter sent on July 9, 1986). A response was received from the State of New Mexico dated August 25, 1986. Both letters reflected some confusion relative to link numbers, prompting E. Linwood Smith & Associates to send another letter and alternative link map to the USFWS on September 11, 1986. A new map was also sent to the State of New Mexico. A revised list of species, reflecting the proper link numbers, was received from the USFWS on October 25, 1986. Problems with link numbers and affected species were settled with the State of New Mexico through a series of telephone conversations with Mr. Andrew Sandoval, Endangered Species Group, New Mexico Department of Game and Fish.

State-listed endangered, threatened and Priority I plant species are not included in the following biological assessment. The reason for excluding such plants is twofold: (1) known localities of such plant populations were generally avoided in siting proposed alternative routes of the project, and (2) it is anticipated that field clearance studies for such species will be conducted as an adjunct to the permitting process for the project.

DESCRIPTION OF THE PROPOSED ACTION

El Paso Electric Company proposes to construct a 345kV electrical transmission line between the existing Springerville Switchyard near Springerville, Arizona and the Luna Substation near Deming, New Mexico. The line, known as the Arizona Interconnection Project, would consist of wooden H-frame structures approximately 75 feet in height and steel structures approximately 105 feet in height. A detailed description of alternatives, including the proposed action, can be found in Chapter 3 of the Draft Plan Amendment/Environmental Impact Statement for the project (U.S. Department of the Interior, Bureau of Land Management (BLM), November 1986).

In arriving at the proposed route for the Arizona Interconnection Project, a total of seven alternative routes were identified and investigated. Identification of alternatives was accomplished following a regional study in which known highly sensitive biotic features were identified and avoided in the route selection process. As a result of this procedure, the vast majority of known occurrences of sensitive species of plants and animals were not included within any of the proposed alternative routes.

The seven alternative routes are briefly summarized below:

- **ROUTE A: Mangus-North Continental Divide Alternative**

Approximately 71.2 percent of this 219.0-mile-long route is located in relatively insensitive vegetation types (Chihuahuan desertscrub, desert and plains grassland). Pinyon-juniper and pinyon-juniper/grassland ecotones account for 25.9 percent, ponderosa pine forest, ponderosa pine/pinyon-juniper ecotones and ponderosa pine grasslands account for 2.4 percent of the route, and riparian woodlands comprise 0.3 percent.

- **ROUTE B: Mangus-South Continental Divide Alternative**

Sixty-six percent of this route is located in low-sensitivity vegetation types: Chihuahuan desertscrub (22.9 percent), desert grasslands (16.4 percent), and plains grassland (26.8 percent). Other types traversed include pinyon-juniper woodlands (20.3 percent), ponderosa pine forests, ponderosa pine/pinyon-juniper ecotones, ponderosa pine grasslands and mixed coniferous forest (combined total of 13.4 percent), and riparian woodlands (0.3 percent). Route B has a total length of 221.5 miles.

- **ROUTE C: Tularosa-North Continental Divide Alternative**

Route C is 214.1 miles long with more than 70 percent of the route located in Chihuahuan desertscrub, desert grasslands and plains grasslands. Twenty-seven percent of the route crosses juniper associations, and 2.8 percent involves ponderosa pine associations and mixed coniferous forest. Riparian woodlands comprise 0.2 percent of the total length of this route.

- **ROUTE D: Tularosa-South Continental Divide Alternative**

Route D is very similar to Route C, with 70.5 percent of its 212.9-mile length situated in Chihuahuan desertscrub, desert grasslands, and plains grasslands. The remainder of the route crosses juniper associations (27.2 percent), ponderosa pine associations and mixed coniferous forest (2.1 percent), and riparian woodlands (0.2 percent).

- ROUTE E: TEP-Greenlee-Hidalgo-Luna Alternative

Route E is 210.4 miles in length and traverses mostly low sensitivity vegetation types (74.8 percent located in Chihuahuan desertscrub, desert grasslands, and plains grasslands). A total of 13.8 percent of the route is located in juniper associations, 6.8 percent in ponderosa pine associations, 3.2 percent in oak woodland, 1.0 percent in mixed coniferous forest, and 0.4 percent in riparian woodlands.

- ROUTE F: TEP-Glenwood-Black Mountain-Luna Alternative

Route F is 200.9 miles in length and traverses Chihuahuan desertscrub, desert grasslands, and plains grasslands (67.3 percent). Other types involved include pinyon-juniper associations (22.5 percent), ponderosa pine and mixed coniferous forest (9.4 percent), and riparian woodlands (0.4 percent).

- ROUTE G: TEP-Glenwood-Highway 180 Alternative

Route G is 176.4 miles in length. This alternative crosses all major vegetation types identified during corridor studies (a total of 11). Of these, only 57.9 percent involve the relatively low sensitivity desertscrub and grassland types. Pinyon-juniper and other juniper associations account for 27.1 percent of the total route length. Other types traversed include ponderosa pine forest (6.0 percent), oak woodland (3.6 percent), ponderosa pine grasslands (2.1 percent), and ponderosa pine/pinyon-juniper ecotones (1.8 percent). Chihuahuan desertscrub and riparian woodland crossings make up the remainder of types traversed on this route.

Of the above alternatives, Route D is the proposed route, and potential biological problems with that route and other alternatives will be discussed in subsequent sections of this assessment.

DETERMINATION OF EFFECT BY LISTING AGENCY AND BY SPECIES

Federally Listed Species on the List Provided by the USFWS

American Peregrine Falcon (*Falco peregrinus anatum*)

The American peregrine falcon is a subspecies of a nearly cosmopolitan species that occur on every major continent except Antarctica (AOU 1983; Terres 1980). Populations of this species have declined markedly almost worldwide in recent decades, apparently due to human use of pesticides containing DDT and similar chemicals which tend to concentrate at the top of food chains (e.g., in predators). In the case of the peregrine falcon, such concentration is manifest in reproductive failure occasioned by thinning of eggshells. Massive declines occurred in this species in the United States prior to the banning of DDT by the federal government. Today there appears to be

some recovery of the species, but populations in the lower 48 states are still marginal and birds that migrate into Mexico and Central America are still being exposed to pesticide hazards.

Peregrine falcons in New Mexico characteristically nest on cliffs in forested or wooded habitats where good populations of prey species (birds) are present (Hubbard 1985).

With regard to the presently proposed project, those alternative routes that utilize Links 41 to 45 (e.g., Alternative Routes E, F and G) are most likely to have an affect on peregrine falcons. Of these three routes, Route E (the western environmentally preferred route) would have the least potential impact on peregrines as the route includes only Link 41, compared with the other two alternatives which include Links 41, 42, 44 and 45. Route D should have no effect on any pairs of nesting peregrine falcons, as the route avoids known nesting areas and is generally situated in habitat types that lack suitable nest sites in highly productive prey species' habitats. Wintering or migrant birds may use transmission line towers for resting or hunting perches, potentially making them more vulnerable to poaching. Collision hazard to peregrines on the proposed route should be minimal due to the size of the conductor bundles (two conductors, each 1.165 inches in diameter). Some collision hazard will, however, exist from the overhead shield wires (designed to prevent damage from lightning strikes) which are 3/8 inch in diameter and not as readily visible as the much larger conductors.

Summary

Construction, operation and maintenance of a 345kV transmission line along the proposed route, Route D, should have little negative effect on peregrine falcons in New Mexico. Some potential collision hazard, mostly from overhead, small diameter shield wires, will persist for the life of the project. This hazard is felt to be very minimal, however, and while negative and long term, it is doubtful it represents a significant threat to the continued occurrence of peregrines in New Mexico.

The no action alternative would preclude any negative impacts to peregrines and other species listed below from this project.

Aplomado Falcon (*Falco femoralis septentrionalis*)

Like the peregrine falcon, this is an endangered species. Aplomado falcons formerly occurred in desert grasslands and savannah-like habitats in south-eastern Arizona, southern New Mexico, and west-central and southern Texas. The aplomado falcon is a neotropical species whose center of distribution is in Central and South America. Occurrences of the species in the United States represented the furthest known northern records (see AOU 1983; Blake 1953; Monson and Phillips 1981; and Terres 1980).

In New Mexico, the historic range of the aplomado falcon includes Catron, Chaves, Dona Ana, Eddy, Grant, Hidalgo, Lea, Lincoln, Luna, Otero, Sierra and Socorro counties (Hubbard 1970; USFWS 1986). Although the species has not been recorded in New Mexico or Arizona since the early 1950s, it is probably appropriate to presume the species is "extinct" in both states. Recovery efforts for the species could, however, include reintroduction into historic ranges in both states.

Since this species no longer occurs in New Mexico, it is not possible to judge the effects of the proposed project. Should aplomado falcons be successfully reintroduced to the southern part of the state, there may be some potential for long term, negative collision hazard. However, aplomado falcons do not forage in the same manner as peregrine falcons, being largely insectivorous and catching prey on or near the ground. They do not fly as fast as peregrines and spend most of their time foraging from fence posts, low growing trees, or utility poles. Consequently, it seems that any collision hazard associated with the proposed project would be very minimal and the species might actually benefit from having transmission towers available for hunting perches.

Summary

Since this species has not occurred in New Mexico for many years, it is difficult to judge the potential effects of the proposed project. However, given the preferred habitat and foraging methods of this bird, it seems likely that the presence of a 345kV transmission line in aplomado falcon habitat would have little or no negative effect, and may even be beneficial.

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle, an endangered species, breeds from Alaska to Newfoundland and south to Baja, California, the southwestern states, Texas and Florida (AOU 1983; Hubbard 1985). The species has suffered significant population declines south of Canada in recent decades due to pesticide poisoning and subsequent reproductive failure resulting from drastic thinning of eggshells. At present, there appears to be some recovery of the species, probably as a result of the federal ban on certain pesticides.

In New Mexico bald eagles occur as transients and winter residents, with little good evidence of the species ever having bred in the state (Hubbard 1985). Hubbard (1985) cites key habitat areas in the state as the winter roost and concentration areas at Navajo Lake, the Chama Valley, Cochiti Lake, the northeastern lakes (Raton to Las Vegas), the lower Canadian Valley, Sumner Lake, Elephant Butte Reservoir, Caballo Lake, and the upper Gila River Basin. It appears that numbers of wintering bald eagles in New Mexico have been increasing, perhaps as a result of reservoir construction resulting in greater availability of prey species (fish and waterfowl). In addition to taking fish and waterfowl, bald eagles prey on jack rabbits and will readily take carrion.

With respect to the proposed project, the USFWS and the State of New Mexico have expressed concern about alternative routes that include Links 38 to 48 (e.g., Alternative Routes E, F and G). The USFWS expressed concern specifically for Links 38 to 46 (see appended letter dated October 23, 1986) with regard to bald eagle use. The State of New Mexico expressed concern about Links 42 to 45, 47 and 48 in more generic terms (see appended letter dated August 25, 1986), but did mention bald eagle use of the Gila River in winter.

The proposed Route D does not include any of the links listed above. Local resident Oliver Lee reports that wintering bald eagles occur throughout the Plains of San Augustin (personal communication December 11, 1986).

Summary

The proposed route of the Arizona Interconnection Project does not include any links identified by state or federal agencies as being of particular concern for bald eagles. Link 16, part of the proposed route, does pass near an identified bald eagle wintering area and the edge of the Plains of San Augustin where transient and wintering bald eagles occur. The presence of a transmission line in any open country in south-central New Mexico may pose some limited collision hazard threat to transient and wintering bald eagles. The structural configuration of conductors in a 345kV line precludes significant electrocution hazard to large birds of prey, so this should not be a problem, even for birds as large as bald eagles. Some benefit may accrue to bald eagles and other raptors in the form of wood-pole towers being available for resting and hunting perches. Overall, it appears that potential hazards to bald eagles are very slight and may be inconsequential when potential benefits are considered.

Whooping Crane (*Grus americana*)

The endangered whooping crane formerly occurred as a breeding species at fresh water marshes and wet prairies in Canada, south into North Dakota, Iowa, Minnesota, and in southeastern Texas and Louisiana (AOU 1983). At present the species breeds only in Wood Buffalo National Park in the Northwest Territories. From these breeding grounds, the birds migrate south through the Great Plains to winter at Aransas National Wildlife Refuge on the Texas Coast (AOU 1983; Hubbard 1985). In 1975, an experimental population of whooping cranes was established at Grays Lake National Wildlife Refuge in Idaho. These birds migrate south to winter in New Mexico and represent the individuals that may be affected by the Arizona Interconnection Project transmission line.

Birds migrating from Idaho winter in the central Rio Grande Valley and are occasionally seen in other nearby areas. A total of 32 birds were known to

have wintered in New Mexico in 1984 (Hubbard 1985). Wintering birds forage with sandhill cranes in agricultural fields and valley pastures, and roost on sandbars in the Rio Grande River.

The USFWS has expressed concern about potential hazards to these birds if construction of the proposed project were to occur on Link 30, which is adjacent to Link 31 (part of the proposed route). See appended letter dated October 23, 1986. No other portions of the proposed route or any other alternative was identified as having potential negative impact on this species. Subsequent to receipt of the USFWS letter, several telephone contacts were made by Dr. E.L. Smith concerning Link 30 and whooping cranes. The gist of these conversations (with John C. Peterson, Field Supervisor, USFWS, Albuquerque on October 8, 1986; with Greg Smith, New Mexico Game and Fish on October 8, 1986; and with Andrew Sandoval, New Mexico Game and Fish on October 22, 1986) was that the location of Link 30 was adequately removed from Caballo Reservoir (four miles or more), was not running at right angles to any known movement corridor, and was not situated in a vegetation type used by cranes for foraging. The consequent consensus was that Link 30 posed no real threat to whooping cranes. Moreover, Link 30 was ultimately dropped from the proposed route (Link 31 replaced it in the final route selection), and it appears that the Arizona Interconnection Project's environmentally preferred route will have no impact, either positive or negative, on whooping crane populations.

Summary

Construction of the Arizona Interconnection Project along the proposed Route D will have no impact, either positive or negative, on populations of wintering whooping cranes in New Mexico. The route is located more than five miles from Caballo Reservoir, does not run at right angles to any known movement corridor, and is not situated in a vegetation type used by either whooping or sandhill cranes for foraging.

Gila Topminnow (*Poeciliopsis occidentalis*)

The endangered Gila topminnow once occupied the entire Gila River Basin of New Mexico and Arizona with the exception of high mountain streams (Minckley 1973). Extirpation of this species is almost certainly due to the widespread introduction of mosquitofish (*Gambusia affinis*) which apparently prey on young topminnows and small adults (Minckley 1973).

Within the Arizona Interconnection Project area, Gila topminnows occur in the extreme southwestern portion of Catron County where they occupy streams and springs, concentrating in shallow areas with aquatic vegetation (see appended letter from the USFWS dated October 23, 1986).

Impacts to this species resulting from construction, operation and maintenance of the Arizona Interconnection Project on the proposed route should be

nonexistent. The latter because none of the links that comprise the proposed route contain known populations of this diminutive fish. Links 42 to 46 have been identified as ones on which construction of the line could have deleterious effects on Gila topminnows; however, none of these links are included in proposed Route D.

Summary

Since the proposed route does not include those links upon which populations of Gila topminnows may occur, it seems reasonable to assume that construction of the project will have no effect on the species.

Spikedace (*Meda fulgida*)

The threatened spikedace is endemic to the Gila River Basin of Arizona and New Mexico (Minckley 1973; Probst, et al. 1985). Populations of this small fish have declined markedly throughout its range as a result of habitat degradation, stream dewatering, and changes in stream channel morphology (Probst et al. 1985). Introduction of the red shiner (*Notropis lutrensis*) has also had a negative effect on populations of spikedace, as has the introduction of various species of catfish (Minckley 1973).

At present, in New Mexico populations of spikedace persist in the Gila River system in Grant and Catron counties in the lowermost West and Middle Forks, the reach between Mogollon Creek and the head of the Middle Box (e.g., Cliff-Gila Valley) and at the mouth of the Middle Box. Irregular occurrences of the species have been recorded downstream from the Middle Box to the Arizona state line in the Gila River (Probst et al. 1985). The major population of the species occurs in the Cliff-Gila Valley.

Relative to the proposed project, Link 48 has been identified by the USFWS as the only one likely to have deleterious effects on the spikedace (see appended letter dated October 23, 1986). Link 48 is not a component of proposed Route D, nor is it part of the western environmentally preferred route, Route E. Consequently, it seems unlikely that construction on Route D would have any negative effect on this species. Similarly, should construction occur on the western environmentally preferred route, impacts to populations of this fish should be insignificant.

Summary

Construction of the project on proposed Route D should have no effect whatever on populations of spikedace in the Gila River. The western environmentally preferred route, Route E, does not include Link 48 and should have insignificant impact on this species should construction occur on this route.

Loach Minnow (Tiaroga cobitis)

The loach minnow, a threatened species, like the preceding species is endemic to the Gila River Basin of Arizona and New Mexico (Minckley 1973). This small species inhabits riffle areas with moderate to rapid water velocities over elevated cobble and rubble where sediments have not filled in crevices between bottom substrate features (Probst et al. 1985). Population declines in this species appear to be largely related to changes in habitat resulting from stream dewatering, sediment deposition, and changes in flow regimes and channel morphology (Probst et al. 1985).

In New Mexico this species occurs in the Gila River upstream from the Middle Box Canyon, in the San Francisco and Blue rivers upstream from their confluence, in the Tularosa River downstream from Cruzville, and in the lower reaches of Whitewater Creek, a tributary of the San Francisco River (USFWS letter dated October 1986 - appended). Within these major habitat areas, the species appears to be relatively secure (Probst, et al. 1985).

Arizona Interconnection Project routes that include Links 45 and 46 have been identified as the most likely to have negative effects on this species (e.g., Routes E, F and G). The proposed Route D does not include any of these links, and construction on this route should have no effect on this species. Construction on the western environmentally preferred route, Route E, could have some negative effects on Link 46, a component of Route E. Negative effects could, however, be avoided by clearly spanning loach minnow habitat and not building any access or spur roads close enough to that habitat to cause an increase in silt loading.

Summary

Construction on proposed Route D should have no effect on this species. Construction on the western environmentally preferred route could have some negative impact to loach minnow populations unless suitable habitat is clearly spanned and construction is accomplished in such a way as to prevent increases in silt loading within loach minnow habitat.

White-sided Jack Rabbit (Lepus callotis gaillardi)

The white-sided jack rabbit is known in the United States only from extreme southern Hidalgo County, New Mexico (Findley, et al. 1975). Recent counts of this species have indicated that the species is apparently a relatively well-established member of the mammalian fauna of the United States (Hubbard 1985). The species may be in jeopardy due to overgrazing and conversion of Mexican grassland habitats to agriculture in areas south of New Mexico (Hubbard, et al. 1985), and is consequently listed as a species that is a candidate for listing among the threatened and endangered species of the United States.

The species apparently occurs in areas of pure grassland, where it forages on nutgrass (Cyperus rotundus), buffalo-grass (Buchloe dactyloides) and other shortgrass plains species (Bednarz 1977 in Hubbard, et al. 1985). United States population estimates of the species are in the vicinity of 340 animals (Bednarz 1977) and maintenance of population numbers is probably dependent on proper range management that precludes overgrazing, conversion to agriculture, and development (Hubbard, et al. 1985).

Relative to the proposed project, the USFWS has identified Links 46, 47 and 49 as ones on which there is potential for negative impact to this species. None of these links (parts of Routes E and F) extend into southern Hidalgo County. Links 46 and 49 traverse the northern reaches of the Animas Valley north and west of Lordsburg, some distance to the north of described and published accounts of this species (see Findlay, et al. 1975; Hubbard and Conway 1985). Moreover, the proposed Route D does not include Links 46, 47 or 49. The western environmentally preferred route, Route E, does include Links 46 and 49, but both links appear to be well to the north of those portions of Hidalgo County where the white-sided jack rabbit is known to occur in the United States.

Summary

The white-sided jack rabbit is known in the United States only from extreme southern Hidalgo County, New Mexico. The proposed route of the project does not include any links in Hidalgo County and construction on this route should have no effect on this species. The western environmentally preferred route does include Links 46 and 49 which traverse the northern reaches of the Animas Valley in Hidalgo County. However, most records of the white-sided jack rabbit (see Findlay, et al. 1975; Hubbard, et al. 1985) appear to be located far to the south of either of these links, and it seems that construction on the western environmentally preferred route would likely have only minimal negative impact potential as far as this species is concerned.

Mimbres Figwort (Scrophularia macrantha syn. S. coccinia)

Like the white-sided jack rabbit, the Mimbres figwort is a species that is a candidate for listing among the threatened or endangered wildlife and plants of the United States. This species is a perennial herb that is known to occur in Grant and Luna counties, New Mexico on steep, rocky, usually north-facing slopes, between 7,000 and 8,000 feet elevation (New Mexico Native Plants Protection Advisory Committee 1984). The elevation at which this plant normally occurs is at the transition zone between pinyon-juniper woodlands and ponderosa pine forest (USFWS, appended letter dated October 23, 1986). The New Mexico Native Plants Protection Advisory Committee (1984) recognizes unregulated mining, road construction, and grazing as potential threats to the continued existence of the Mimbres figwort.

In their letter of October 23, 1986, the USFWS specifically identified Link 33 as potentially affecting populations of this species. Link 33, however, is not part of the proposed route, nor does the centerline of Link 33 traverse habitats similar to those described as being suitable for the Mimbres figwort (e.g., Link 33 traverses desert grasslands and Chihuahuan desertscrub, not pinyon-juniper or ponderosa pine habitats).

Summary

The link identified by the USFWS as being of concern relative to impact to populations of the Mimbres figwort is not a component of the environmentally preferred route. Moreover, the centerline of the identified link does not traverse suitable habitat for this species. Consequently, it is apparent that construction of a 345kV transmission line along the environmentally preferred route should have no effect on any populations of this species.

Alamosa Spring Snail (*Tryonia* spp.)

This small, totally aquatic snail is a candidate for listing among the threatened and endangered wildlife and plants of the United States. The snail is endemic to central New Mexico and is known only from a group of thermal springs near former Fort Harmony and at the head of Alamosa Creek, both localities on the west side of the San Mateo Mountains (Taylor, et al. 1985; USFWS letter dated October 23, 1986). In these localities, the snail is found in slow-moving water near spring sources.

The USFWS identified Links 21 and 24 as potentially affecting this species. Links 21 and 24 are not a part of proposed Route D.

Summary

The Alamosa Spring snail is not known to occur along proposed Route D.

New Mexico Department of Game and Fish

The State of New Mexico Department of Game and Fish maintains lists and data files on species endangered in the State of New Mexico (New Mexico Department of Game and Fish 1985). Two levels of endangerment are defined as:

GROUP 1 - Species whose prospects of survival or recruitment within the state are in jeopardy.

GROUP 2 - Species whose prospects of survival or recruitment within the state are likely to become jeopardized in the foreseeable future.

The following listing, with brief commentary, includes those species potentially affected by construction of the proposed Arizona Interconnection Project.

Common Black Hawk (Buteogallus anthracinus) GROUP 2

Recent (1960 or later) records of this species in New Mexico have come largely from the lowland reaches of the Gila, San Francisco and Mimbres drainages. The species typically occur in riparian woodlands along permanent streams.

Construction of the Arizona Interconnection Project on proposed Route D should have no effect on this species or its key habitat. Construction on the western environmentally preferred route, Route E, could result in some long term, minor negative impact in the form of residual collision hazard.

Bald Eagle (Haliaeetus leucocephalus) GROUP 2

See under federally listed species.

Baird's Sparrow (Ammodramus bairdii) GROUP 2

The key habitat area for this small finch is in the Animas Valley of southern Hidalgo County. There are also some records of this species in grassland habitats near Deming where it occurs as a migrant, usually in the fall.

Construction of the project on the proposed route could have some minor negative impact on this species, accruing from habitat conversion to access or spur roads along Links 34, 35 and 36.

McCown's Longspur (Calcarius mccownii) GROUP 2

This species occurs in grassland habitats, mostly during periods of migration. Some birds winter in the Animas Valley, which is a key habitat area for the species. McCown's longspur is also known to occur, in recent times, in the Nutt area east of Link 34 on the proposed route.

Like the preceding species, construction on the proposed route may have some minor, negative impact to this species along Links 32, 34, 35 and 36 as a result of habitat conversion to access and stub roads.

Peregrine Falcon (Falco peregrinus) GROUP 1

See under federally listed species.

Whooping Crane (Grus americana) GROUP 2

See under federally listed species.

Olivaceous Cormorant (Phalacrocorax olivaceus) GROUP 2

This species breeds and is variably resident at Caballo and Elephant Butte reservoirs, and has been known to occur in the Gila River Valley.

Construction on proposed Route D should result in no impact to this species. Construction on the western environmentally preferred route could result in some minor, long-term negative impact in the form of collision hazard at river crossings.

Bell's Vireo (Vireo bellii) GROUP 2

Bell's vireo summers locally in the lower Gila Valley and elsewhere in southern New Mexico where dense stands of mesquite (Prosopis spp.), willow (Salix spp.), and seep willow (Baccharis glutinosa) are characteristic plant species.

Construction of the project on either the eastern or western environmentally preferred routes could have minor negative impact on this species. Such impacts could be reduced to near zero if access and stub roads are not built in dense riparian scrub habitats, and if such habitats are clearly spanned by project structures.

Gray Vireo (Vireo vicinior) GROUP 2

Gray vireos summer locally west of the eastern plains of New Mexico where they nest in pinyon-juniper habitats.

Construction on any of the alternative routes would likely have some negative impact on this species as a result of the need to clear pinyon-juniper habitats from tower sites, access roads, and stub roads.

Abert's Towhee (Pipilo aberti) GROUP 2

This species occurs primarily in the lower Gila River Valley where it occupies riparian habitats of seep willow and mesquite et al.

Construction on proposed Route D would have no effect on this species. Construction on the western environmentally preferred route could have some minor impacts if construction of access or stub roads occur in riparian scrub habitats.

Gila Woodpecker (Melanerpes uropygialis) GROUP 2

This species is resident in the Gila Valley where it is largely restricted to lower elevation woodlands with cottonwood (Populus fremontii) trees along permanent stream courses.

Construction on proposed Route D would have no effect on this species. Construction on the western environmentally preferred route could have some negative impact on this species, especially if access roads, spur roads, or tower sites are placed in cottonwood riparian woodlands.

Gila Chub (Gila intermedia) GROUP 1

The Gila chub formerly occurred in the Gila River Basin, but has not been collected in New Mexico since 1923. The New Mexico Department of Game and Fish suggests, however, that the species may still persist in the state.

Construction on proposed Route D would have no effect on this species. Construction on the western environmentally preferred route could have some negative impact if populations persist and construction results in any modification of any perennial stream habitat.

Roundtail Chub (Gila robusta) GROUP 2

The roundtail chub in New Mexico occurs in the San Juan and Gila River basins, with numerous key habitat areas identified on the Gila River and its tributaries.

Construction on proposed Route D should have no effect on this species. Construction on the western environmentally preferred route could have some negative impact to local populations of this species if construction activities resulted in impacts to perennial stream habitats.

Spikedace (Meda fulgida) GROUP 2

See under federally listed species.

Loach Minnow (Tiaroga cobitis) GROUP 2

See under federally listed species.

White-sided Jack Rabbit (Lepus callotis) GROUP 1

See under federally listed species.

Alamosa Spring Snail (Tryonia, species undescribed)

See under federally listed species.

Mexican Garter Snake (Thamnophis eques) GROUP 2

In New Mexico this species is restricted in distribution to the lower reaches of the Gila River Basin where it is most frequently found associated with aquatic and riparian habitats.

Construction of the Arizona Interconnection Project on proposed Route D would have no effect on this species. Some negative impact could possibly occur if construction occurred on the western environmentally preferred route and spur roads, access roads, or tower sites were placed in riparian habitats.

Narrow-headed Garter Snake (Thamnophis rufipunctatus) GROUP 2

This species occurs on, and just below, the Mogollon Plateau in Catron, Grant and Hidalgo counties where it inhabits clear, cool, rocky streams. The species extends downstream on the Gila River to the Arizona border.

Construction on proposed Route D would have no effect on this species. Some negative impact could occur if construction took place on the western environmentally preferred route and resulted in damage to riparian and aquatic habitats on the Gila River.

Sonoran Mountain Kingsnake (Lampropeltis pyromelana) GROUP 2

The Sonora mountain kingsnake in New Mexico occurs in montane areas on the Mogollon Plateau and downslope in cool canyon bottoms.

Construction on proposed Route D should have no effect on this species. Construction on the western environmentally preferred route could possibly have some minor, negative impact, particularly if uninformed construction personnel intentionally kill snakes, mistaking them for the poisonous "look alike" coral snake.

Gila Monster (Heloderma suspectum) GROUP 1

Recent records of Gila monsters in New Mexico occur with regularity in the Gila Valley from the Arizona border eastward to the Peloncillo Mountains.

Construction on proposed Route D should have no effect on this species. Construction on the western environmentally preferred route could have some minor, negative impact. The latter resulting from animals being run over by construction vehicles and intentionally dispatched by construction workers.

SUMMARY OF EFFECT

The following summary of effect assumes that construction will occur on Route D.

Federally Listed and Candidate Species

- | | |
|---------------------------|---|
| American Peregrine Falcon | - Some potential long term, minor collision hazard may persist. |
| Aplomado Falco | - Probably no negative effect, may be slightly beneficial. |
| Bald Eagle | - Some potential long term, minor collision hazard may persist. |
| Whooping Crane | - No effect. |
| Spikedace | - No effect. |
| Loach Minnow | - No effect. |
| White-sided Jack Rabbit | - No effect. |
| Mimbres Figwort | - No effect. |
| Alamosa Spring Snail | - No effect. |

New Mexico Department of Game and Fish Listed Species

- | | |
|----------------------|------------------------------------|
| Common Black Hawk | - No effect. |
| Bald Eagle | - See above. |
| Baird's Sparrow | - Minor negative impact. |
| McCown's Longspur | - Minor negative impact. |
| Peregrine Falcon | - See above. |
| Whooping Crane | - See above. |
| Olivaceous Cormorant | - No effect. |
| Bell's Vireo | - Possible minor, negative impact. |
| Gray Vireo | - Probable negative impact. |

- Abert's Towhee - No effect.
- Gila Woodpecker - No effect.
- Gila Chub - No effect.
- Roundtail Chub - No effect.
- Spikedace - See above.
- Loach Minnow - See above.
- White-sided Jack Rabbit - See above.
- Alamosa Spring Snail - See above.
- Mexican Garter Snake - No effect.
- Narrow-headed Garter Snake - No effect.
- Sonora Mountain Kingsnake - No effect.
- Gila Monster - No effect.

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ADDENDUM TO BIOLOGICAL ASSESSMENT ARIZONA INTERCONNECTION PROJECT ARIZONA STATE LISTED SPECIES

INTRODUCTION

The State of Arizona Game and Fish Department maintains lists of species of threatened native wildlife in Arizona (Arizona Game and Fish Commission 1982). Potential for occurrence of four of these species within the Arizona portion of the proposed Arizona Interconnection Project exists. Link 46, a portion of Alternative Route E, the only Arizona link, has been identified by the Arizona Game and Fish Department (see appended letters dated August 5, 1986 and January 13, 1987) as potentially having negative impact on the four species which are spotted owl, western jumping mouse, narrow-headed garter snake, and loach minnow.

As does the New Mexico Department of Fish and Game, the Arizona Department of Game and Fish categorizes threatened native wildlife based on degree of rarity as follows:

- GROUP 1 - Animals known or suspected to have been extirpated from Arizona but which still exist elsewhere.
- GROUP 2 - Animals whose continued presence in Arizona is now in jeopardy and extirpation from the state is highly probable if no recovery efforts are made.
- GROUP 3 - Animals whose continued presence in Arizona could be in jeopardy in the foreseeable future.
- GROUP 4 - Animals for which there is a moderate threat to the habitats they occupy.

The following listing, with brief commentary, includes those species identified by the Arizona Game and Fish Department that may potentially be affected by construction of the Arizona Interconnection Project on Link 46, Route E, in Arizona.

Spotted Owl (*Strix occidentalis*) GROUP 4

The spotted owl in the southwestern United States is poorly understood because of a lack of research on habitat needs. The little information that is available suggests that the birds nest in deep, narrow canyons with ponderosa pine, firs, box elder, and oak (Dawson, et. al. 1987), and in old growth coniferous forest, which is the species preferred habitat in the northwestern United States. During Phase I of the present study, the U.S. Forest Service, Apache-Sitgreaves National Forest, identified areas of old growth timber as potential habitat for spotted owls. As a result of that identification, areas

identified as potential spotted owl habitat were avoided in the siting of alternative routes for the Arizona Interconnection Project.

Construction of the project on Link 46 could have some negative impact to this species, particularly if there was impact in cool, moist canyon habitats. We have recommended throughout, however, that such habitats be avoided either through selection of routes that impinge on a minimum of such habitats or by clearly spanning them and not placing any access roads or other construction features within them in order to minimize or eliminate any negative impact.

Western Jumping Mouse (*Zapus hudsonicus*) GROUP 3

The western jumping mouse in Arizona is restricted to the White and Mogollon Mountains in Apache and Greenlee counties, usually at elevations in excess of 7,700 feet (Hoffmeister 1986). The species is normally found in high elevation grasslands along stream edges.

Construction of the Arizona Interconnection Project along Link 46 would probably have little or no negative impact on this species. Link 46 in Arizona is located wholly below a 6,800-foot elevation and does not traverse any montane grassland habitats.

Narrow-headed Garter Snake (*Thamnophis rufipunctatus*) GROUP 3

The narrow-headed garter snake is a highly aquatic species that typically inhabits clear, cool, rocky streams in montane habitats (Eley, et al. 1985). The species has been known to occur on the Gila River near the Arizona-New Mexico border at an approximate 4,200-foot elevation but is usually found at higher elevations (up to 7,500 feet).

Construction of the Arizona Interconnection Project on Link 46 could have some negative impact to habitats actually or potentially occupied by this species if such construction occurs in higher elevation riparian/aquatic habitats. If such habitats are spanned and no access roads are placed in such habitats as has been recommended, impact to narrow-headed garter snakes should be minimal.

Loach Minnow (*Tiaroga cobitus*) GROUP 3

The loach minnow is a highly specialized Gila River basin endemic species that is essentially restricted to gravelly riffles in small to moderate-sized creeks and rivers (Minckley 1973). The species is apparently common today only in Aravaipa Creek in Pinal and Graham counties. Population declines in this species appear to be related to habitat destruction and introduction of competitive species such as the red shiner (*Notropis lutrensis*).

During Phase I studies of this project, the U.S. Forest Service identified potential critical habitat for this species on the Blue River upstream from Clifton, Arizona. As a result of that identification, no Arizona alternative link was considered west of the Blue River (i.e., requiring crossing of the Blue). Construction of the project on Link 46 should have no significant impact on this species provided all crossings of potential habitat for this diminutive fish are spanned and no construction of roads or other facilities occurs within riparian habitats bordering live streams that may support loach minnow populations.

SUMMARY OF EFFECT

The following summary of effect of construction on Link 46 assumes that all mitigation recommendations are put into effect (e.g., spanning of riparian or aquatic systems).

Arizona Department of Game and Fish Listed Species

Spotted Owl	- Potential minor negative impact
Western Jumping Mouse	- No effect
Narrow-headed Garter Snake	- No effect
Loach Minnow	- No effect

REFERENCES CITED

Arizona Game and Fish Commission. 1982. Threatened native wildlife in Arizona. Arizona Game and Fish Department Publ. 12 pp.

Dawson, W.R., J.D. Ligon, J.R. Murphy, J.P. Myers, D. Simberloff and J. Verner. 1987. Report of the scientific advisory panel on the spotted Owl. Condor 89:205-229.

Ely, J.W., J.P. Hubbard and H. Campbell. 1985. Handbook of species endangered in New Mexico, REPT/CO/TH/RU:1-2. New Mexico Department of Game and Fish, Santa Fe, New Mexico.

Hoffmeister, D.F. 1986. Mammals of Arizona. University of Arizona Press and Arizona Game and Fish Department. 602 pp.

Minckley, W.L. 1972. Fishes of Arizona. Arizona Game and Fish Department. 293 pp.

I have some strong reservations regarding the proposed corridors found within Zone 1. More specifically, those designated in the Phase II Final Alternatives are 34, 35, 36, 37, 38, 39, 40, 41 and 42. These routes would necessitate crossing wetlands habitat found along the Gila River. They would bisect some of the most productive big game habitat in this part of the state and they would traverse extensive canyon and cliff habitats.

This portion of the Gila River is critical habitat for migrant and wintering bald eagles, and serves as refugia for numerous species of waterfowl and sandhill cranes. While river crossings could probably be made relatively benign, negative impacts of such crossings on these species is a distinct possibility.

Power poles are used by raptors for perching, thus making them susceptible to illegal killing. Construction and maintenance activities may adversely impact nesting raptors, as they are very sensitive to disturbances especially during

GOVERNOR

TONY ANAYA

State of New Mexico

STATE GAME COMMISSION

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DIRECTOR AND SECRETARY
TO THE COMMISSION

HAROLD F. OLSON



DEPARTMENT OF GAME AND FISH

STATE CAPITOL
SANTA FE
87503

August 25, 1986

Mr. Jim Jensen, Project Manager
WIRTH Environmental Services
3737 N. 7th Street, Suite 211
Phoenix, Arizona 85014

Dear Mr. Jensen:

This correspondence outlines my agency's concerns regarding the proposed Arizona Interconnection Project, involving a 345 kV transmission line between Redhill and Deming, New Mexico. It is my agency's mandated responsibility to manage the wildlife resource and assure that the various ecosystems of the state continue to support viable populations of all species of wildlife. To this end, my staff has assessed the potential of this project to negatively impact these resources and their habitats.

I have some strong reservations regarding the proposed corridors found within Zone 2, more specifically, those designated in the Phase II Final Alternatives map as 36, 37, 38, 39, 41 and 42. These routes would necessitate crossing wetlands habitat found along the Gila River, they would bisect some of the most productive big game habitat in this part of the state and they would traverse extensive canyon and cliff habitats. 36 = 42 *
38 = 43
35 = 44
37 = 45
41 = 46
42 = 47

This portion of the Gila River is critical habitat for migrant and wintering bald eagles, and serves as refugia for numerous species of waterfowl and sandhill cranes. While river crossings could probably be made relatively benign, negative impacts of such crossings on these species is a distinct possibility.

Power poles are used by raptors for perching, thus making them susceptible to illegal killing. Construction and maintenance activities may adversely impact nesting raptors, as they are very sensitive to disturbances especially during

* First line number changed so you can find the location better.
A. H. Gutierrez, Jr., M.D.
CARLSBAD

August 25, 1986

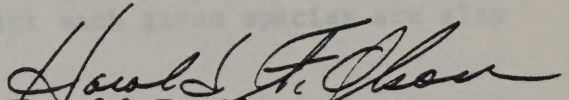
the breeding season. Overhead wires also pose a serious threat to waterfowl, cranes and eagles in the form of collisions. The frequency of collisions with overhead wires is directly related to the proximity of powerlines relative to wetland roosting habitat and feeding areas.

The willingness to consider scenic values and/or visual impacts by El Paso Electric Company is commendable. However, additional considerations should be taken into account. Maintaining visual quality in a scenic area, where large numbers of the public can see transmission lines needs closer scrutiny. New Mexico's landscape is crisscrossed with a proliferation of transmission lines, and constructing another one only adds to the existing visual pollution.

The negative impacts on wildlife and scenic values can only be mitigated by a decision not to build the transmission line along proposed corridors 36-41 and 36-42. Fewer environmental consequences would result from paralleling the existing Tucson Electric Power Company Transmission line corridor. In my view, this is the only environmentally sound and the most practical alternative. I strongly urge you to adopt this corridor as your preferred alternative.

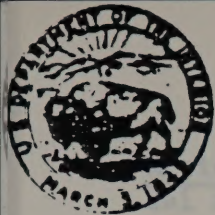
Thank you for the opportunity to comment. If you have any questions, please contact Andrew Sandoval of this office at (505) 827-9912.

Sincerely,


Harold F. Olson
Director

avs

xc.: John R. Brown (Office of Policy Analysis)
Sharon Murray (EID)
E. Linwood Smith (Ecological Consultant)
John C. Peterson (USFWS)
Craig Nordyke (SW Area Supervisor)



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Field Supervisor
Ecological Services, USFWS
Post Office Box 4487
Albuquerque, New Mexico 87196

Cons. #2-22-84-I-075

August 12, 1986

Mr. James E. Jensen, Project Manager
Wirth Environmental Services
3737 N. 7th Street, Suite 211
Phoenix, Arizona 85014

Dear Mr. Jensen:

This responds to your July 3, 1986 request for comments on alternative corridor alignments currently under study for the proposed Arizona Interconnection Project. The proposed project involves a 345 kV transmission line from the Springerville Generating Station in Arizona to the Luna Substation north of Deming, New Mexico. We have reviewed the proposed alternatives with regard to potential impacts on 1) Federally threatened and endangered species, 2) National Wildlife Refuges, 3) wetland and riparian habitats, 4) local fish and wildlife resources, and 5) other items of environmental concern to this agency. Our comments are as follows.

Endangered Species. The enclosed species list includes Federally listed, proposed, and candidate species which may potentially be impacted. The numbered alternatives most likely to impact each given species are also provided in the enclosed list.

The list has been expanded to include Category 1 candidate species. Candidate species have no legal protection under the Endangered Species Act, but Category 1 species are those species for which the Service has substantial information to support their listing as endangered or threatened. The development and publication of proposed rules for these species is anticipated. They are included in this document for planning purposes only.

Information relating to the Section 7 consultation process has been enclosed for your use in project planning. We suggest you contact the New Mexico Department of Game and Fish and the New Mexico Heritage Program for information concerning fish, wildlife and plants of State concern.

National Wildlife Refuges. We are returning the map on which our Bosque del Apache and Sevilleta National Wildlife Refuges have been located. It appears that the Federal lands administered by the U.S. Fish and Wildlife Service (FWS) are located on the fringe of your project area and would not be affected.

Wetlands. The FWS places a high priority on the protection of wetland and riparian habitats. Wetlands include any area which, at least, periodically satisfies one or more of the following conditions: 1) soils saturated or flooded, 2) hydric soils, 3) hydrophytic vegetation. Regardless of the corridor chosen, the specific alignment should avoid these habitats whenever possible. Otherwise, impacts to these habitats should be mitigated to assure that there is no net loss of in-kind habitat value.

Local Fish and Wildlife Resources. The proposed transmission line poses hazards to nesting and migrating raptors, waterfowl, and cranes; all of which can be found in the project area. All of these birds are susceptible to collisions with overhead wires. For waterfowl and cranes, the incidence of collisions is related to the proximity of powerlines to roosting and feeding sites. Wire strikes by cranes are most common where powerlines border or cross wetland roosting habitat or are routed between roost and feeding fields located a short distance apart. For raptors, the incidence of collisions is related to the proximity of powerlines to nesting sites. In addition, nesting raptors are highly sensitive to disturbance during the breeding season and, therefore, may be adversely impacted by construction and maintenance activities. Raptors also use power poles for perching sites and may become victims of illegal shooting.

To minimize adverse impacts to waterfowl and cranes, the proposed alignment should be located at least 1.25 miles from traditional roost and feeding sites. To minimize adverse impacts to raptors, the proposed alignment should be chosen so as to avoid cliff habitats. We recommend project plans include measures to limit construction activities within one mile of raptor nest sites during breeding season. To minimize illegal shooting of raptors, project maintenance roads should be closed to public access.

We recommend the following publications for additional information on mitigation of powerline impacts:

"Suggested Practices for Raptor Protection on Powerlines, the State of the Art in 1981." Raptor Research Foundation, Department of Veterinary Biology, Univ. of Minnesota, St. Paul, Minnesota 55101.

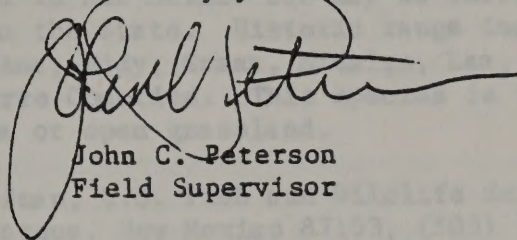
"Impacts of Transmission Lines on Birds in Flight,
Proceedings of a Workshop." U.S. Fish and Wildlife
Service. 1978.

Other Items of Environmental Concern. We recommend that you take precautions to retard erosion and minimize compaction of soils. Possible precautions include minimizing the area of scarification, following ground contours and re-establishing herbaceous vegetation incrementally as work progresses. Vegetation should be re-established where it has been removed, including all access roads not needed for powerline maintenance.

In general, based on all of the above factors, our greatest concern is with alternatives 36, 37, 38, 39 and 42. Routes following existing powerline corridors are expected to have the least significant overall impact on fish and wildlife resources.

We appreciate this opportunity to comment. If you require further assistance or have any questions regarding our recommendations, please call Maureen Long or Gerry Roehm at (505) 766-3966.

Sincerely yours,



John C. Peterson
Field Supervisor

Enclosures

cc: (w/cy encl)

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Heritage Program, New Mexico Natural Resources
Department, Santa Fe, New Mexico

E. Linwood Smith & Associates, Ecological Consultants, Tucson, Arizona
Regional Director, FWS, HR and WR (Realty), Albuquerque, New Mexico

Species List

Arizona Interconnection Project
August 12, 1986

Listed Species

American Peregrine Falcon (Falco peregrinus anatum) - Alternatives 35, 36, 37, 38, 39 - The peregrine falcon prefers areas with steep rocky cliffs in close proximity to water and areas with relatively dense bird populations, which are its primary prey source. The peregrine is also found in forest and grassland biomes.

Authority: John P. Hubbard, New Mexico Department of Game and Fish, State Capitol, Santa Fe, New Mexico 87503, (505) 827-2438.

Aplomado Falcon (Falco femoralis septentrionalis) - An endangered bird, is currently not found in New Mexico but may be introduced into historic range in the State. Historic range includes Catron, Chaves, Dona Ana, Eddy, Grant, Hidalgo, Lea, Lincoln, Luna, Sierra and Socorro Counties. This species is found in open woodland, savanna or open grassland.

Authority: Steve Hoffman, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103, (505) 766-8063.

Bald Eagle (Haliaeetus leucocephalus) - Alternatives 35, 36, 37, 38, 39, 40 - Winters in the project area and is also a migrant. Roosts in large trees which may or may not be close to their feeding areas. Bald eagle feeding areas include rivers, reservoirs, and ponds.

Authorities: Steve Hoffman, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, NM 87103, (505) 766-3974 and John P. Hubbard, New Mexico Department of Game and Fish, Villagra Bldg., Santa Fe, New Mexico 87503, (505) 827-7438.

Whooping Crane (Grus americana) - Alternative 30 - Occupies the project area October through February. Roosts on gravel bars of the Rio Grande and islands surrounded by water. Feeds in cultivated fields and wetlands within several miles of the Rio Grande.

Authorities: James Lewis, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, NM 87103, (505) 766-3974 and Roderick Drewien, c/o Bosque del Apache National Wildlife Refuge, P.O. Box 1246, Socorro, NM 87801, (505) 835-1828.

Gila Topminnow (Poeciliopsis occidentalis) - Alternatives 36, 37, 38, 39, 40 - This species is found in the extreme southwest portion of Catron County in streams and springs, concentrating in shallow areas with aquatic vegetation or debris.

Authority: Jerry Burton, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, NM 87103, (505) 766-3972.

Proposed Species

Loach minnow (Tiaroga cobitis) - Alternatives 39, 40 - In New Mexico, this fish is found in riffles of the Gila River upstream from the Middle Box Canyon, the San Francisco and Blue Rivers upstream from their confluence, the Tularosa River downstream from Cruzville, and the lower reaches of Whitewater Creek, a tributary to the San Francisco River.

Authorities: Jim Johnson, Office of Endangered Species, FWS, P. O. Box 1306, Albuquerque, New Mexico 87103, (505) 766-3972 and David Propst, New Mexico Department of Game and Fish, State Capitol, Santa Fe, New Mexico 87503, (505) 827-9901.

Candidate Species

White-sided jackrabbit (Lepus callotis gaillardi) - Alternatives 40, 41, 43 - This species occurs in the Animas and Playas Valleys of southern Hidalgo County. Preferred habitat consists of grassland not invaded by shrubs and forbs.

Authority: John P. Hubbard, New Mexico Department of Game and Fish, State Capitol, Santa Fe, New Mexico 87503, (505) 827-7894.

Mimbres figwort (Scrophularia coccinea) - Alternative 33 - This plant is found on dry, steep hillsides near rocks at the elevation of the transition between pinyon-pine and ponderosa pine habitat types. The red flowers appear from July to September.

Authority: Paul Knight, New Mexico Heritage Program, Santa Fe, New Mexico, Telephone: 827-7866.

Alamosa spring snail (Tryonia spp.) - Alternatives 21, 24 - Found in a group of thermal springs near former Fort Harmony (west side of San Mateo Mountains, T85, R7W, Sec. 31) and the head of Alamosa Creek (west side of San Mateos, T5S, R8W and R9W). This small snail, 1/12 of an inch long, is found in slow moving current.

Authority: Ms. Sally E. Stefferud, U.S. Fish and Wildlife Service, Albuquerque, New Mexico 87103, (505) 766-3972 or FTS 474-3972.

Critical Habitat

Loach minnow (Tiaroga cobitis) - Critical habitat is being proposed for this species in portions of the Gila, San Francisco, Tularosa, and Blue Rivers, and Aravaipa Creek in Grant and Catron Counties, New Mexico, and Graham, Pinal, and Greenlee Counties, Arizona

John D. Petersen
Field Supervisor

Enclosure

cc: (w/ or w/o)
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Heritage Program, New Mexico Natural Resources
Department, Santa Fe, New Mexico
Regional Director, FWS, Fish and Wildlife Management, Albuquerque,
New Mexico



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Field Supervisor
Ecological Services, USFWS
Post Office Box 4487
Albuquerque, New Mexico 87196

Cons. #2-22-84-I-075

October 23, 1986

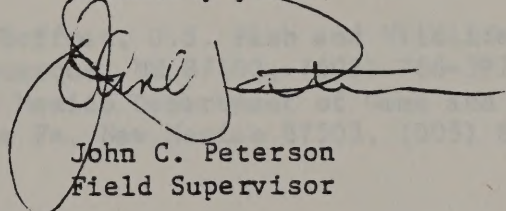
E. Linwood Smith and Associates
Ecological Consultants
3030 North Longhorn Drive
Tucson, Arizona 85749

Dear Mr. Smith:

This responds to your letter dated September 11, 1986, concerning our letter and species list dated August 12, 1986, to Mr. James Jensen. Our species list relevant to the Arizona Interconnection Project was based on information last revised on March 19, 1986. It is apparent that many of the link numbers were changed in subsequent revisions. Therefore the numbers cited in our species list are inaccurate. I have enclosed a revised species list with link numbers which are consistent with the final alternatives for the project. I hope this clarifies any confusion which our August 12 letter may have caused.

In addition, please note that the spikedace (Meda fulgida), listed as threatened has been added to the species list, and the loach minnow (Tiaroga cobitis) will be changed from proposed to listed (as threatened) on October 28, 1986. Publication of final rules for this species is pending.

Sincerely yours,



John C. Peterson
Field Supervisor

Enclosure

cc:(w/cy encl)

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Heritage Program, New Mexico Natural Resources
Department, Santa Fe, New Mexico
Regional Director, FWS, Fish and Wildlife Enhancement, Albuquerque,
New Mexico

Species List

Arizona Interconnection Project
October 23, 1986

Listed Species

American Peregrine Falcon (Falco peregrinus anatum) - Links 41-45 - The peregrine falcon prefers areas with steep rocky cliffs in close proximity to water. Since dense bird populations provide the primary food source for the peregrine falcon, areas in which these bird concentrations are found are also important habitat. It has a lower preference for forest and grassland biomes.

Authority: John P. Hubbard, New Mexico Department of Game and Fish, State Capitol, Santa Fe, New Mexico 87503, (505) 827-2438.

Aplomado Falcon (Falco femoralis septentrionalis) - An endangered bird, is currently not found in New Mexico but may be introduced into historic range in the State. Historic range includes Catron, Chaves, Dona Ana, Eddy, Grant, Hidalgo, Lea, Lincoln, Luna, Otero, Sierra, and Socorro Counties. This species is found in open woodland, savanna or grassland habitats.

Authority: Steve Hoffman, U.S. Fish and Wildlife Service, P. O. Box 1306, Albuquerque, New Mexico 87103, (505) 766-3063.

Bald Eagle (Haliaeetus leucocephalus) - Links 38-46 - Winters in the project area and is also a migrant. Roosts in large trees which may or may not be close to their feeding areas, which include rivers, reservoirs, and ponds.

Authorities: Steve Hoffman, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, NM 87103, (505) 766-3974 and John P. Hubbard, New Mexico Department of Game and Fish, Villagra Bldg., Santa Fe, New Mexico 87503, (505) 827-7438.

Whooping Crane (Grus americana) - Link 30 - Occupies the project area October through February. Roosts on gravel bars and islands in the Rio Grande. Feeds in cultivated fields and wetlands within several miles of the Rio Grande.

Authorities: James Lewis, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, NM 87103, (505) 766-3974 and Roderick Drewien, c/o Bosque del Apache National Wildlife Refuge, P.O. Box 1246, Socorro, NM 87801, (505) 835-1828.

Gila Topminnow (Poeciliopsis occidentalis) - Links 42-46 - This species is found in the extreme southwest portion of Catron County in streams and springs, concentrating in shallow areas with aquatic vegetation or debris.

Authority: Jerry Burton, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, NM 87103, (505) 766-3972.

Spikedace (Meda fulgida) - Link 48 - In New Mexico, this fish is found in shallow runs of the Gila River upstream from Red Rock.

Authorities: Jim Johnson, Office of Endangered Species, FWS, P. O. Box 1306, Albuquerque, New Mexico 87103, (505) 766-3972. and David Propst, New Mexico Department of Game and Fish, State Capitol, Santa Fe, New Mexico 87503, (505) 827-9901.

Proposed Species

Loach minnow (Tiaroga cobitis) - Links 45 and 46 - In New Mexico, this fish is found in riffles of the Gila River upstream from the Middle Box Canyon, the San Francisco and Blue Rivers upstream from their confluence, the Tularosa River downstream from Cruzville, and the lower reaches of Whitewater Creek, a tributary to the San Francisco River.

Authorities: Jerry Burton, U.S. Fish and Wildlife Service, P. O. Box 1306, Albuquerque, New Mexico 87103, (505) 766-3972 and David Propst, New Mexico Department of Game and Fish, State Capitol, Santa Fe, New Mexico 87503, (505) 827-9901.

Candidate Species

White-sided jackrabbit (Lepus callotis gaillardi) - Links 46, 47 and 49 - This species occurs in the Animas and Playas Valleys of southern Hidalgo County. Preferred habitat consists of grassland not invaded by shrubs and forbs.

Authority: John P. Hubbard, New Mexico Department of Game and Fish, State Capitol, Santa Fe, New Mexico 87503, (505) 827-7894.

Mimbres figwort (Scrophularia coccinia) - Link 33 - This plant is found on dry, steep hillsides near rocks at the elevation of the transition between pinyon-pine and ponderosa pine habitat types. The red flowers appear from July, to September.

Authority: Paul Knight, New Mexico Heritage Program, Santa Fe, New Mexico, Telephone: 827-7866.

Alamosa spring snail (Tryonia spp.) - Links 21 and 24 - Found in a group of thermal springs near former Fort Harmony (west side of San Mateo Mountains, T85, R7W, Sec. 31) and the head of Alamosa Creek (west side of San Mateos, T5S, R8W and R9W). This small snail, 1/12 of an inch long, is found in slow moving current.

Authority: Ms. Sally E. Stefferud, U.S. Fish and Wildlife Service, Albuquerque, New Mexico 87103, (505) 766-3972 or FTS 474-3972.

Critical Habitat

Loach minnow (Tiaroga cobitis) - Critical habitat is being proposed for this species in portions of the Gila, San Francisco, Tularosa, and Blue Rivers, and Aravaipa Creek in Grant and Catron Counties, New Mexico, and Graham, Pinal, and Greenlee Counties, Arizona.

However, we feel it is necessary to reiterate some of the information provided to WYNS Environmental Services in an August 5, 1986 letter. Little, if any of this information appears to have been incorporated into the PA/DEIS. In this letter we did acknowledge that Link 45 falls within an existing corridor and, as such, would certainly result in considerably less impacts than if a new corridor were created. At the same time, however, we did express a strong concern over the potential for increased road access, which would reduce big game habitat effectiveness.

There was minimal, if any, discussion of game species in the PA/DEIS. The northern portion of Link 45 constitutes excellent habitat for mule deer and white-tailed deer, black bear, Merriam's turkey, mountain lion and javelina. The rugged terrain in the general vicinity of the San Francisco River provides habitat for Rocky Mountain bighorn sheep.

Authority: John F. Hubbard, New Mexico Department of
Game and Fish, Santa Fe, New Mexico 87501,
(505) 833-7864.

Alamosa spring snail (*Trypania* spp.) - Plate 11 and 12 - Found in a group
of several springs near Lower Fort Huerfano (west side of
San Juan Mountains, T25, R2W, S1) and the head of
Alamosa Creek (west side of San Juan, T25, R2W and R2W).
This snail shell, 1 1/2 in. high, is found in the
moving current.

Authority: Paul Knight, New Mexico Heritage Program, Santa
Fe, New Mexico, Telephone: 833-1866.

Alamosa spring snail (*Trypania* spp.) - Plate 11 and 12 - Found in a group
of several springs near Lower Fort Huerfano (west side of
San Juan Mountains, T25, R2W, S1) and the head of
Alamosa Creek (west side of San Juan, T25, R2W and R2W).
This snail shell, 1 1/2 in. high, is found in the
moving current.

Authority: Mr. Billy E. Stettin, U.S. Fish and Wildlife
Service, Albuquerque, New Mexico 87103, (505) 766-3911 or
573 474-3911.

Critical Habitat

Alamosa spring snail (*Trypania* spp.) - Critical habitat is being proposed
for the species in portions of the Rio Grande, San Juan, and
Tularosa, and Blue Rivers, and Arroyo Grande in Grant and
Geron Counties, New Mexico, and Graham, Pinal, and Gila
Counties, Arizona.

Commissioners:
V. LINN MONTGOMERY, Flagstaff, Chairman
FRED S. BAKER, Elgin
LARRY D. ADAMS, Bullhead City
FRANCIS W. WERNER, Tucson
THOMAS G. WOODS, JR., Phoenix

Director
BUD BRISTOW

Assistant Director, Services
ROGER J. GRUENEWALD

Assistant Director, Operations
DUANE L. SHROUFE



ARIZONA GAME & FISH DEPARTMENT

2222 West Greenway Road Phoenix Arizona 85023 942-3000

January 13, 1987

Mr. H. James Fox, District Manager *Jx*
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

RE: Arizona Interconnection Project

Dear Mr. Fox:

The Arizona Game and Fish Department has reviewed the draft Plan Amendment/Environmental Impact Statement (PA/DEIS) for the proposed El Paso Electric 345kV Transmission line, or Arizona Interconnection Project. In general, the PA/DEIS appears to be comprehensive and accurate in its treatment of the six alternatives, and adequately documents the selection of the Proposed Action.

Our interest largely pertains to the only corridor route through Arizona, Route E. This route is identified as the one (of 7) which "would result in the least disruption to environmental resources" (page 3-17). This would be mainly due to the alignment of the transmission line adjacent to an existing corridor. We do not dispute this finding, particularly in light of the fact that this route was not considered the Proposed Action, due to other evaluation parameters.

However, we feel it is necessary to reiterate some of the information provided to WIRTH Environmental Services in an August 5, 1986 letter. Little, if any of this information appears to have been incorporated into the PA/DEIS. In this letter we did acknowledge that Link 46 falls within an existing corridor and, as such, would certainly result in considerably less impacts than if a new corridor were created. At the same time, however, we did express a strong concern over the potential for increased road access, which could reduce big game habitat effectiveness.

There was minimal, if any, discussion of game species in the PA/DEIS. The northern portion of Link 46 constitutes excellent habitat for mule deer and white-tailed deer, black bear, Merriam's turkey, mountain lion and javelina. The rugged terrain in the general vicinity of the San Francisco River provides habitat for Rocky Mountain bighorn sheep.

The PA/DEIS includes considerable treatment of nongame, T&E, and sensitive wildlife species. However, information relative to the documented presence of Arizona State threatened native wildlife species within the general area of Link 46, which was provided in the August 5, 1986 letter, was reflected in neither the PA/DEIS nor Figure 4-3 (Biotic Resources/Sensitive Species). These species include:

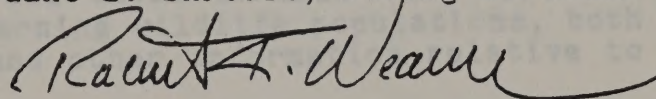
- 1) Spotted owl (Strix occidentalis lucinda); Arizona Group 4, Threatened Native Wildlife (TNW) list; USFWS Category II species.
- 2) Western jumping mouse (Zapus princeps); Arizona Group 3, TNW list.
- 3) Loach minnow (Tiaroga cobitis); Arizona Group 3, TNW list; Federal Threatened Species.
- 4) Narrow-headed garter snake (Thamnophis rufipunctatus); Arizona Group 3, TNW List; USFWS Category II Species.

We provide this information, here, only to ensure the accuracy and comprehensiveness of the Final PA/EIS.

We appreciate the opportunity to have been involved in this project, as well as having had the opportunity to review the PA/DEIS.

Sincerely,

Duane L. Shroufe, Acting Director



Robert K. Weaver
Habitat Evaluation Coordinator
Planning and Evaluation Branch

RKW:NLD:cal

cc: Mike Yeager, Supervisor, Pinetop Regional Office
Juan Romero, Wildlife Manager
State Clearinghouse, AZ 86-80-0045

Commissioners:
W. LINN MONTGOMERY, Flagstaff, Chairman
FRED S. BAKER, Elgin
LARRY D. ADAMS, Bullhead City
FRANCES W. WERNER, Tucson
THOMAS G. WOODS, JR., Phoenix

Director
BUD BRISTOW

Assistant Director, Services
ROGER J. GRUENEWALD

Assistant Director, Operations
DUANE L. SHROUFE



ARIZONA GAME & FISH DEPARTMENT

2222 West Greenway Road Phoenix, Arizona 85023 942-3000

August 5, 1986

Mr. James E. Jensen, Project Manager
WIRTH Environmental Services
3737 N. 7th Street, Suite 211
Phoenix, AZ 85014

RE: Arizona Interconnection Project
Corridor Map Review.

Dear Mr. Jensen:

The Arizona Game and Fish Department has reviewed the map for final corridor alternatives (Phase II) for the Arizona Interconnection Project 345kV transmission line. The map of final corridor alternatives identified only one link (number 46) being evaluated in Arizona. We were pleased to see that all other Phase I corridor proposals located on the Apache-Sitgreaves N.F. were eliminated (as per July 1986 newsletter). Resource values associated with these eliminated corridors (e.g. extensive riparian/fisheries) far exceed those of link 46. We would like to provide information concerning wildlife populations, both game and nongame, key habitats and other information relative to link 46 through eastern Arizona.

GENERAL COMMENTS

1. It appears that the majority of link 46 falls within an existing powerline corridor with two transmission lines. This existing corridor has already acted to degrade scenic and aesthetic values. Placement of the proposed 345kV transmission line here would further degrade these values, though to a far less degree than if a new corridor were created.
2. Existing road access along much of the northern portion of link 46 is absent or extremely limited. Where such limited access exists, it needs to be maintained. This would entail use of helicopters during construction, as was done for the existing transmission lines.

GAME SPECIES CONCERNS

For ease of discussing game species populations, link 46 through Arizona has been subdivided into 4 sections, based on broad habitat types and associated wildlife.

1. Section 1 - New Mexico state line south to Apache-Sitgreaves N.F. boundary.

Habitat here predominately pinyon-juniper/oak-pine woodland and high grassland. Area heavily dissected by deep canyons, many supporting riparian communities.

This section supports excellent populations of deer, black bear, Merriam's turkey, mountain lion, javelina and Rocky Mountain bighorn sheep.

2. Section 2 - Apache-Sitgreaves N.F. southern boundary south to Democrat Mesa.

This area constitutes a transition in habitat types between pinyon-juniper/high grasslands and desert grassland and Chichuahuan desertscrub. Riparian communities predominate in canyon areas found along this section of link 46.

This section supports populations of deer, javelina, black bear, mountain lion, and some Merriam's turkey.

3. Section 3 - Democrat Mesa south to Duncan.

This section is predominated by Chichuahuan desertscrub habitats with riparian areas scattered throughout.

This area supports scattered big game, primarily mule deer and javelina. Fair to good Gambel's quail populations are found throughout the area.

4. Section 4 - Duncan south to New Mexico state line.

This section is predominately Chichuahuan desertscrub and desert grassland habitats. It supports marginal big game populations, including pronghorn, mule deer and javelina. The area does support fair to good Gambel's and scaled quail populations. A transplant of approximately 75 pronghorn is scheduled for December, 1986 in the general vicinity of this portion of link 46.

JHE:MLD:cal

cc: Joan Bowers, Wildlife Manager

Mike Janger, Supervisor, Pinetop Regional Office

Bruce Palmer, Nogahne Branch

NONGAME SPECIES

The Department's Nongame Data Management System was accessed to check the documented presence of Federal and State threatened or unique nongame wildlife. The system yielded records for the occurrence of the following species within the general area around link 46:

1. Spotted Owl (Strix occidentalis). Arizona Group 4, Threatened Native Wildlife (TNW) list. The spotted owl is tied to old growth forests, moist oak-pine and riparian woodland areas.
2. Western Jumping Mouse (Zapus princeps). Arizona Group 3, TNW list. This species is dependent on riparian and wet meadow areas.
3. Narrow-headed garter snake (Tiarogo cabbitis). Arizona Group 3, TNW list; Proposed Federal Threatened list.

KEY HABITATS

Two habitats that occur within the general vicinity of link 46 which are of key importance to wildlife are riparian and Rocky Mountain subalpine marshlands. These high priority habitats should not be impacted during the construction of a new 345kV transmission line.

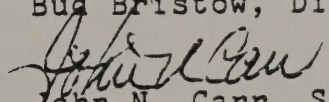
WILDLIFE OPPORTUNITIES

Habitat conditions for wildlife, particularly big game, on the northern portion of link 46 are currently near ideal. The potential does exist for the development of waters along the southern portion to benefit wildlife as a mitigation measure.

The information provided here is quite general in nature. If link 46 remains a viable corridor alternative, we strongly recommend that comprehensive clearance studies be carried out to address the concerns for those species and habitats identified in this letter. We appreciate the opportunity to provide these comments and look forward to continued cooperation with WIRTH Environmental Services.

Sincerely,

Bud Bristow, Director


John N. Carr, Supervisor
Planning and Evaluation Branch

JNC:NLD:cal

cc: Juan Romero, Wildlife Manager
Mike Yeager, Supervisor, Pinetop Regional Office
Bruce Palmer, Nongame Branch.

SUMMARY OF PUBLIC COMMENTS

WRITTEN PUBLIC COMMENTS ON RECENT TRANSMISSION LINE PROJECTS IN NEW MEXICO AND ARIZONA

The following listing of concerns has been raised in written communications with BLM or EPE since the BLM public scoping meetings for the Springerville to Daring Project. They are listed from the following comment periods:

April 1984	Scoping Meetings
November 1984	EPE Workshops
April 1985	FEIS
August 1985	FEIS
December 1985	FEIS Extension
April 1986	Arizona Interconnection Post West Removals

Indefinite Notification

- Received FEIS four days before comment deadline
- Monticello community was not adequately informed before or after modified route
- Proposed line would cross respondent's ranch, yet never notified
- Many potentially affected landowners not notified

Project Need

- Request specific data supporting need, rather than general statements (response in FEIS still not satisfactory)

Corridorization

- Use existing corridors (through Gila Forest)
- Gila National Forest corridor was approved for future lines
- Follow existing roads
- NM Public Service Commission (1972) recommended that all future lines be confined to existing corridors or west side of state

Impacts on Biological Resources

- Peregrine falcon nests and breeding areas around Horse Mountain
- Disrupt elk, deer, and rabbit habitat near Horse Springs Ranch
- Fragile ecosystem in Monticello area
- Moir elk propagation and eagle nesting area (near former A-113 west of Plains of San Agustin)
- Toxic plants, particularly *Astragalus* spp. in San Agustin Plains and vicinity
- Impact on micro-ecology near few remaining live streams

APPENDIX C
SUMMARY OF PUBLIC COMMENTS

SUMMARY OF PUBLIC COMMENTS

WRITTEN PUBLIC COMMENTS ON RECENT TRANSMISSION LINE PROJECTS IN NEW MEXICO AND ARIZONA

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Inadequate Notification

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Corridorization

- Use existing corridors (through Gila Forest)
- Gila National Forest corridor was approved for future lines
- Follow existing roads
- NM Public Service Commission (1972) recommended that all future lines be confined to existing corridors on west side of state

Impacts on Biological Resources

- Peregrine falcon nests and birding areas around Horse Mountain
- Disrupt elk, deer, and raptor habitat near Horse Springs Ranch
- Fragile ecosystem in Monticello area
- Main elk propagation and eagle nesting area (near former Alt A&B west of Plains of San Agustin)
- Toxic plants, particularly *Astragalus* spp. establish themselves rapidly on disturbed soils in San Agustin Plains and vicinity
- Impact on micro-ecology near few remaining live streams

Impacts on Land Uses (future and planned)

- Lines should follow property boundaries; otherwise they will interfere with ranching operations
- Equal consideration should be given to public land as to private land
- Apache Kid and Aldo Leopold Wildernesses were not considered in EIS
- Stay one-half mile from ranch headquarters
- Hazard for airport approach to runway 31 and 27 (original Proposed Action near Winston)

Soil Erosion/Revegetation

- Potential of erosion in rough terrain
- Revegetation will take years
- Landowner will require restoration of vegetation

Recreation Tourism

- Impact on tourism in Catron County, particularly along US 180, not adequately addressed in EIS

Impacts on Cultural Resources

- Historic sites near Horse Springs Ranch
- Monticello rich in artifacts that haven't been adequately surveyed
- Indian ruins on land owned by Monticello Acequia Cooperative
- Winston Canyon and Chloride Canyon - numerous Indian ruins
- Black Range and Alamosa Canyon areas
- Numerous sites along series of faults (Sibley Mts., Salado Mts., Cuchillo Negro Mts.,
- Many sites unique due to extensive vandalism in other areas of southwestern New Mexico

Equity and Compensation

- Additional 55 miles (Monticello Modification) to avoid ranch of someone affiliated with BLM
- Line crossing ranch property will devalue property
- Those impacted by line will not receive benefits (power is not generated or consumed in New Mexico)
- Time needed for revegetation will cut into cattle grazing and result in income losses
- Impact on tax revenues to the County

Visual Impacts

- Horse Mountain Wilderness Study Area
- Plains of San Agustin
- San Mateo Mountain
- Crossing SR 12 in relation to VRM standards
- Horse Mountain to Panther Peak
- Los Palomas and Las Animas
- SR 142
- See for miles without buildings or obstructions
- Allegros Mountain area

Health and Safety

- Harmful electromagnetic effects to cattle and horses
- Harmful electromagnetic effects to humans
- Loss of privacy
- Iron Mountain - very high incidence of lightning strikes
- Television reception interference

Access

- Encourage increased motor vehicle traffic
- New roads will increase access to private property
- Maintenance roads closed to public to prevent illegal hunting

Water Resources

- Impact on spring feeding irrigation system

Alternatives and Siting Opportunity Areas

1. Forest Road 214 - use as north/south right-of-way
2. Vicinity of Horse Mountain Wilderness
3. Follow Highway 60 towards Socorro going underground at the VLA and connect with existing power line corridors south from Socorro
4. No action
5. Between Winston and la Canada Alamosa
6. East of original proposed action that will cross broad creosote tableland (almost devoid of archaeological sites)
7. Follow TEPCO line into Arizona
8. North out of Deming along eastern edge of Grant County and western edge of Sierra County through NW corner of Sierra County.

9. Public lands
10. Existing corridors and highways
11. Existing corridors across Apache-Sitgreaves
12. Follow Route 60 to Socorro and down I-25.

Avoidance Areas

1. State Highway 61
2. US Highway 180
3. Virgin areas without visual pollution

**SUMMARY OF ISSUES, CONCERNS, SUGGESTIONS
RECEIVED AT MAY 1986 SCOPING MEETINGS
FOR ARIZONA INTERCONNECTION PROJECT**

Six public scoping meetings were held in the following locations:

Socorro, New Mexico - May 6, 1986
Truth or Consequences, New Mexico - May 7, 1986
Deming, New Mexico - May 8, 1986
Clifton, Arizona - May 13, 1986
Springerville, Arizona - May 14, 1986
Reserve, New Mexico - May 15, 1986

These meetings were sponsored by the BLM and attended by representatives of the USFS, EPE and WIRTH. The meetings were designed to accomplish the following purposes:

- Provide project-related information.
- Obtain public input regarding significant issues to be addressed.
- Obtain public suggestions for deletions, additions or adjustment of alternatives.
- Focus the scope of the future corridor level studies for the EIS/MFPA/FPA.

Notification of the meetings occurred in (1) a newsletter notice mailed to the project mailing list of 375 names; and (2) a news release and map sent to the following 14 newspapers and 11 radio stations serving the communities nearest each meeting location.

Newspapers

Albuquerque Journal Albuquerque	El Paso Times Las Cruces
Deming Newspapers Deming	El Paso Herald Post El Paso
The Herald Truth of Consequences	Las Cruces Sun News Las Cruces
Silver City Daily Press Silver City	Silver City Enterprises Silver City
White Mountain Independent Springerville	Defenser Chiefton Socorro
Sierra County Sentinel Truth or Consequences	The Copper Era Clifton
The Eastern Arizona Currier Safford	Catron County Firestarter Glenwood

Radio

KOTS
Deming

KLAQ
El Paso

KAMZ
El Paso

KSIL
Silver City

KNFT
Silver City

KCHS
Truth or Consequences

KGRT
Las Cruces

KASK
Las Cruces

KATO
Safford

KSRC
Socorro

KRVZ
Springerville

Each meeting began with a presentation (see Figure C-1 for outline) by J.W. Whitney, BLM, regarding previous studies, and opportunities for public and agency input. John Whitacre, EPE, discussed the purpose and need for the project and the alternative electrical routing systems that EPE evaluated. Darwin Jensen, EPE, described the project and presented the construction schedule. Garlyn Bergdale, WIRTH, reviewed the environmental study process including scoping, environmental studies, and preparation of the environmental impact statement. Finally, Jim Jensen, WIRTH, presented the findings of the Phase I studies in land use, visual, cultural and biological resource areas. These findings resulted in the selection of broad corridors that were presented to the public.

After the presentation, questions and comments were taken from the group. Participants were encouraged to write their opinions and comments on a worksheet (Figure C-2) and on table-size study area maps. Over 75 people attended the meetings. The attendance sheets are attached.

Written or verbal comments made at the workshops or received in the mail are summarized on the following pages. The comments are organized by issue or resource category followed by preferred alternatives or suggested route modifications. Questions that should be addressed in future newsletters are also included. A comment is listed only once, regardless of the number of times it was mentioned.

Original worksheets and work table maps are on file in the WIRTH office.

Issues of Concern

Need

- Remains to be documented
- Evaluate no action alternative

Use of Public versus Private Lands

- More appropriate to confine this "public" project to public lands

- TEPCO line benefits Arizona but lies in New Mexico
- Erosion land base of small landowners

Visual Resources

- Scenic value of Catron County - one of its principal assets
- Recreation/tourism value along US 180
- Growth and development of southwest New Mexico may be restricted
- Recreation/tourism very important along Black River and Big Lake
- Plains of San Agustin and Bat Cave
- Detrimental to property values
- Monticello Valley - "Class A" scenic quality to residents
- Ladrones WSA - visible from Link 2C
- Link 2N - division of two wildernesses
- Mining operations near Silver City (Link 3B) already disrupt visual resources

Access

- Access roads will encourage vandalism, more hunters
- Maintenance will be very difficult in the winter along the Arizona Highway 666 alternative
- Will entire right-of-way be cleared?

Biological Resources

- Check on migration patterns for big game animals in Apache Sitgreaves National Forest
- Elk habitat area is larger than shown in Apache-Sitgreaves National Forest
- Arizona Game & Fish Department should be involved
- Bighorn sheep have been transplanted in Black River area
- Link 2N (between Gila and Aldo Leopold Wilderness Areas) detrimental to wildlife and timber
- Large game herds on Ladder Ranch will be affected if ranch is opened for maintenance work on lines
- Link 2K contains potential wilderness area
- Link 2C borders Ladrones Wilderness
- West of Link 2G - Langmuir Laboratory is "scientific preserve"
- Plains of San Agustin
- Whooping Crane, geese, sand hills - intersection of Links 2S, 2Q, 2G, 2F; 3A, 2Y, 2W; between Links 2Z and 2X
- Rocky Mountain Elk Foundation establishing elk preserve in Link E area

Specific Land Uses

- Links 2K and 2J (Plains of San Agustin) cut through Farr Cattle Company
- Phelps Dodge objects to links passing near or across present or future mine property
- Link 3B - bisects Phelps Dodge Tyrone townsite; damages grazing land on Pacific Western Land Company; degrades prime rural building sites

- Object to passing close to ranch headquarters at Nutt (Links 2V and 2Y)
- Ladder Ranch is being considered for filming of movies, primarily because of uninterrupted vistas
- Monticello Valley residents oppose Link 20
- Warm Springs in Alamosa Canyon - largest spring in New Mexico and source of water supply in Monticello
- Bernardo, near Link 2C, is possible location for future VLBA antenna. Minimum separation between VLBA antenna and transmission line is 8,000-9,000 feet
- May extend VLA arms by adding low-frequency antennas at fixed location: north and west arms - extend along existing lines; east arm - parallels State Highway 107 to avoid Magdalena Mountains (refer to June 4 letter for specific antenna locations)
- Exclude Links 2J and 2K and avoid Link 2L due to impacts on Plains of San Agustin

Health and Safety

- Electromagnetic effects on grazing cattle

Use of Existing Corridors

- BLM has established corridors that should be used
- Minimize environmental impacts; New Mexico environment is priceless

Improve Long-Term Planning

- Design corridors for future upgrading
- Begin construction of natural gas generation facilities in eastern New Mexico or west Texas to meet future needs, instead of building new 345kV lines every 10 to 12 years
- Weigh additional costs of creating new corridor against long-term economic impacts

Geological Resources

- Plains of San Agustin - most unique sedimentary basin in US

Cultural Resources

- Resource areas on Ladder Ranch
- Ladder Ranch and brand are over 100 years old
- Indian ruins in Monticello Canyon - not recorded on WIRTH presentation maps
- Indian maize and bat cave - important cultural resources in Plains of San Agustin

Cost/Compensation

- EPE construction cost should not be a high priority
- Compensation for easement across Ladder Ranch will be very high

Jurisdictional

- Counties requested representation on Project Steering Committee
- County government interested in enhancement of tax base within county. Requested specific figures

- Will the USFS allow lines through the forests? If the TEPCO corridor is "full", it should not be in the study

Preferred Alternatives

- (Links A-D-DD-G-J-3C) Springerville to southern border of New Mexico
- (Links LL-3I-3H-3F-H-3C) follow existing corridor along US 180 to Greenlee-Luna Corridor
- Extend alternative along Rio Grande to Las Cruces substation and on to El Paso. Existing lines from El Paso to Deming can carry power back to the west.
- Alternative along US 180 and through Silver City is the shortest and should be the cheapest
- Parallel Interstate 25 connecting with Link 2V into Deming
- Bypass Monticello Canyon
- Link 2Z - stay away from the highway
- Link 2Y - dairies are located in corridor

Suggested Alternatives

- Locate Link 2Z north of Krol property (1st choice); parallel existing line that cuts diagonally across Krol property
- Connect centerlines from Link 2V to Link 2P (in a northwesterly direction)
- Move Link 2L west of the Plains of San Agustin and into the forest
- USFS recommended moving Link F due east to connect with intersection of Links 3H, 3E and 3F

Questions

- Who makes the final selection?
- Who evaluates EPE electrical analysis?
- Clarify the role of the New Mexico Public Services Commission in regard to timing for commencement of right-of-way acquisition?
- What is the life expectancy of wood poles?
- What is the cost difference between steel and wood poles?
- Where does cost enter the decision-making process? What weight is it given?

**SUMMARY OF PUBLIC COMMENTS RECEIVED AT
SEPTEMBER 1986 PUBLIC WORKSHOPS
ARIZONA INTERCONNECTION TRANSMISSION LINE PROJECT**

Four public workshops were held during the week of September 22, 1986 in Reserve, Socorro, Truth or Consequences, and Deming, New Mexico. These workshops were noticed in the Arizona Interconnection Transmission Line Project September bulletin and distributed to the 1,000-name mailing list. In addition, press releases and public service announcements were sent to 12 newspapers and 9 radio stations servicing the Arizona Interconnection Project study area. Approximately 60 members of the public attended these workshops. Representatives from the Bureau of Land Management (BLM), United States Forest Service (USFS), El Paso Electric (EPE) and WIRTH also were present. The comment sheet for the workshop is Figure C-3.

These workshops had four purposes: (1) to provide background on the project and review its purpose and need; (2) to report the results of the environmental studies completed since the May 1986 scoping meetings; (3) to present the preliminary environmental alternatives; and (4) to gain public input on the acceptability of these alternatives.

Many questions were asked and comments made by the participants during and after the workshops. No new issues were raised. The attendees were primarily concerned with the following:

- Route the line on public land since it will not directly benefit those landowners whose property will be affected.
- Route the line in Arizona and cross New Mexico as far south as possible, since Arizona will benefit economically from the sale of power.
- Route the line along existing transmission line corridors (specifically the TEP corridor).
- Compensation for long-term damage to ranching units and property values.
- Secure access roads to insure that trespassers will not enter private property.
- Accuracy of EPE need projections to insure additional lines will not be constructed along corridor.
- Competition with local electrical cooperatives to provide power.
- Integrity of the decision: who makes it; can a new alternative be added in the FEIS without a public hearing; what factors will be considered in making the decision.

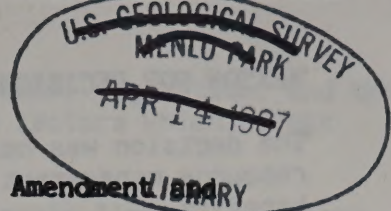
- Effects to health, radio and television.
- Accuracy of EPE electrical performance assessment for all routes, particularly those eliminated to the north and east.
- Cost of western routes are too high. Evaluate and cost the use of wood poles, except where steel structures are needed for safety.
- Personal contact of individual landowners should have occurred prior to identifying final alternatives.

A route modification at the junction of Routes A, B and C was suggested by landowner Oliver Lee. The modification will cross his land and USFS land for approximately the same distance but is more acceptable to Lee. The suggested modification traverses the north side of Highway 12, crossing the highway six miles farther east of the crossing shown on the maps.

Most of the comments regarding acceptability of the various alternatives centered on Alternative E because of the existing TEP transmission line and the lack of private land crossed. It should be noted that of all attendees, only one person was from the area crossed by Alternative E, and he made no public comment. For the most part, the remainder of the participants were private landowners whose land would be crossed by one or more of the alternatives.

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Record of Decision
USDA Forest Service



Gila National Forest

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225

Arizona Interconnection Project Proposed Plan Amendment/PA
Environmental Impact Statement

Catron, Sierra, Grant and Hidalgo Counties, New Mexico

INTRODUCTION

The Arizona Interconnection Project Plan Amendment/Environmental Impact Statement (PA/EIS) documents the environmental analysis of El Paso Electric Company's proposed construction of a 345 kV transmission line from Red Hill, New Mexico (12 miles east of the Springerville generating station) to the Luna substation near Deming, New Mexico. The proposed project crosses approximately 56.0 miles of the Gila National Forest and 79.0 miles of BLM lands. The PA/EIS was jointly prepared by the BLM as the Federal lead agency with the Forest Service as a cooperating agency.

This Record of Decision documents my decision to implement the joint BLM/Forest Service selected alternative on National Forest System lands. As part of the joint BLM/Forest Service decision process, the BLM public comment and protest period and the Forest Service appeal period will run concurrently. Forest Service appeals must be filed separately from BLM protests.

DECISION

Alternative D has been selected as the route for crossing the Gila National Forest by the Arizona Interconnection Project Transmission Line. The Draft PA/EIS identified Route C as the Agency Preferred Route. However, because of public input, Route D was selected because it best satisfies expressed public concerns as well as economic and technical evaluation factors.

ALTERNATIVES CONSIDERED, BUT ELIMINATED FROM DETAILED STUDY

A number of alternatives were considered but eliminated from detailed study. Four general system alternatives were evaluated and eliminated including: (1) energy conservation; (2) alternative generator sources; (3) alternative transmission systems; and (4) alternative transmission technologies. Alternatives not studied in detail are addressed in Chapter 3 of the Draft PA/EIS and Chapter 2 of the Final Proposed PA/EIS.

ALTERNATIVES EVALUATED IN DETAIL

The no action and approximately 900 miles of alternative corridors were studied in detail and presented in the draft PA/EIS. Of the 900 miles of alternatives, seven final routing alternatives were selected for comparison with the no-action alternative. The final alternative routes are as follows:

Eastern Routes

- Route A: Mangas-North Continental Divide Alternative
- Route B: Mangas-South Continental Divide Alternative
- Route C: Tularosa-North Continental Divide Alternative
- Route D: Tularosa-South Continental Divide Alternative

Western Routes

- Route E: TEP-Greenlee-Hiladago-Luna Alternative
- Route F: TEP-Glenwood-Black Mountain-Luna Alternative
- Route G: TEP-Glenwood-Highway 180 Alternative

REASON FOR DECISION

The decision was based on evaluation of which alternative provides quality resource management , protection, and public service while maximizing net public benefits.

Because the no-action alternative does not serve the objectives of this project it has been eliminated from consideration as the agency proposed alternative.

Seven final routing alternatives were evaluated. The western environmentally preferred alternative was Route E. The two other western Routes, F and G , were environmentally less desirable and would result in greater environmental impacts. Route F and G would cross potential peregrine falcon and bald eagle nesting habitat, over 20 other rare plant and animal species and the San Francisco River. Route F would also cross the Gila River and the Lower Box area of critical environmental concern. Route G, while the shortest, crosses the greatest amount of private lands and is least preferred by New Mexico Department of Game and Fish.

Routes C and D were the environmentally preferred eastern alternatives. Specific concern for Routes A and B is along the northern portion of the routes passing near the Mesita Blanca and Eagle Peak Wilderness Study Areas and through the Mangas Mountains. Potential impacts in this area include suitable timber sales area and visual impacts associated with vegetation removal.

Because of the environmental effects on Routes A, B, F, and G, they were not considered further for the final selected alternative.

Routes C, D, and E had nearly equal environmental impacts, therefore, the final decision was based primarily on an analysis of technical and economic factors identified by Forest Service and BLM and on public comments. Public comment showed a strong preference for maximizing the use of federally administered public lands and for avoiding the Plains of San Agustin. Based on public input, it was appropriate to select Route D which avoids the Plains of San Agustin and maximizes the amount of federal land crossed by the project.

In addition to the public's concerns, the following criteria were also considered.

Rehabilitation - Successful rehabilitation is dependent on factors including, but not limited to, steepness of terrain, aspect, moisture regimes, and vegetative/soil composition. Routes E and D cross areas of steep terrain which increase rehabilitation risks. However, Route E has a greater rehabilitation risk than D because it crosses more very rugged country along the New Mexico-Arizona state boundary. Routes D and C have similar rehabilitation potential with a favorable advantage to Route C due to gentler terrain through the Plains of San Agustin. However, Route D was the selected route because it avoids impacting the Plains of San Agustin and crosses more public lands than Route C.

Expansion - One factor in selecting a route was the potential to expand the corridor if new long term demand should develop. Expansion of an existing corridor is normally more desirable than creation of new corridors in the future. Route has little or no additional expansion capability. Route C offers slightly better expansion capabilities than Route D due to the narrow "window" Route D must negotiate between roadless areas. Although Route C provides for excellent expansion capability, Route D was the selected route in response to public comments regarding crossing the Plains of San Agustin.

System Reliability - The characteristics of terrain, weather, vegetation, and the physical composition of the transmission line itself are factors which effect system reliability.

Route E provides the least reliable system because of terrain limitations along the upper one-third of the line. Heavy snow loads, narrow routing opportunities and heavily forested areas reduce the reliability of a system in Route E. Route E would require crossings of the existing Tucson Electric Power line in at least two locations creating additional reliability risks.

Routes D and C are about equal with a slight advantage going to Route C because it crosses less rugged terrain. However, Route D was selected as the proposed route because it is well within the industry's acceptable risk standards, avoids encroaching on the Plains of San Agustin, and crosses more public lands.

Cost - Cost is a reflection of engineering requirements due to terrain limitations and the mitigation required to minimize environmental impacts. Since costs are ultimately passed on to the consumer, land managers are concerned about project costs especially when environmental impacts between alternatives are nearly equal.

Route E costs approximately \$10 million more than Route D. Route C is the least expensive, costing approximately \$1 million less than Route D. However, Route D was selected as the proposed alternative because its cost is not significantly higher than Route C, and it better responds to public concerns.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The no-action alternative is the environmentally preferred alternative. However, because the no-action alternative does not meet the project's purpose and need only the routing alternatives were considered for the preferred alternative. Of the two major routing alternatives, the western environmentally preferred alternative is Route E and the eastern environmentally preferred alternatives are Routes C and D because they are essentially equal in environmental effects.

MITIGATION

Mitigation requirements for the 345 kV transmission line include but, not are limited to:

- * Protection of cultural resources in compliance with the National Historic Preservation Act.

- * Consideration for visual resource management objectives through use of non-specular conductors, dull tower finish, special tower design, feathered vegetation clearing edges, modified tower spacing, towers placed at maximum feasible distance for highway, trail and canyon crossings.

- * Wildlife, vegetation, and soil erosion mitigation measures will be achieved limiting new access construction in designated areas, avoiding or spanning sensitive features, modifying construction schedules to avoid impacts to threatened or endangered species, and utilizing soil and resource conservation and protection measures.

MONITORING

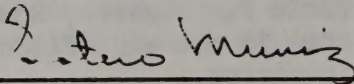
Monitoring of construction activities will occur throughout all construction and clean-up activities.

IMPLEMENTATION

Selection of Route D as the route for the proposed transmission line was a joint decision between the Forest Service and the BLM. When all of the administrative procedures involving BLM protests and/or Forest Service appeals have been resolved, each agency will provide the necessary authorizations for construction and occupancy of the lands they administer.

APPEAL RIGHTS

The decision to implement the scheduled alternative on National Forest System lands is subject to administrative review in accordance with the provisions of the Forest Service Appeal Regulations set forth in 36 CFR 211.18. Notice of appeal must be made in writing and submitted to Sotero Muniz, Regional Forester, Southwestern Region, USDA Forest Service, 517 Gold Avenue SW, Albuquerque, NM 87102, within 45 days from the date of the Regional Forester's decision. A statement of reasons to support the appeal and any request of oral presentations must be filed within the 45 day period for filing a notice of appeal.



SOTERO MUNIZ
Regional Forester

March 20, 1987

Date



~~WITHDRAWN~~

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